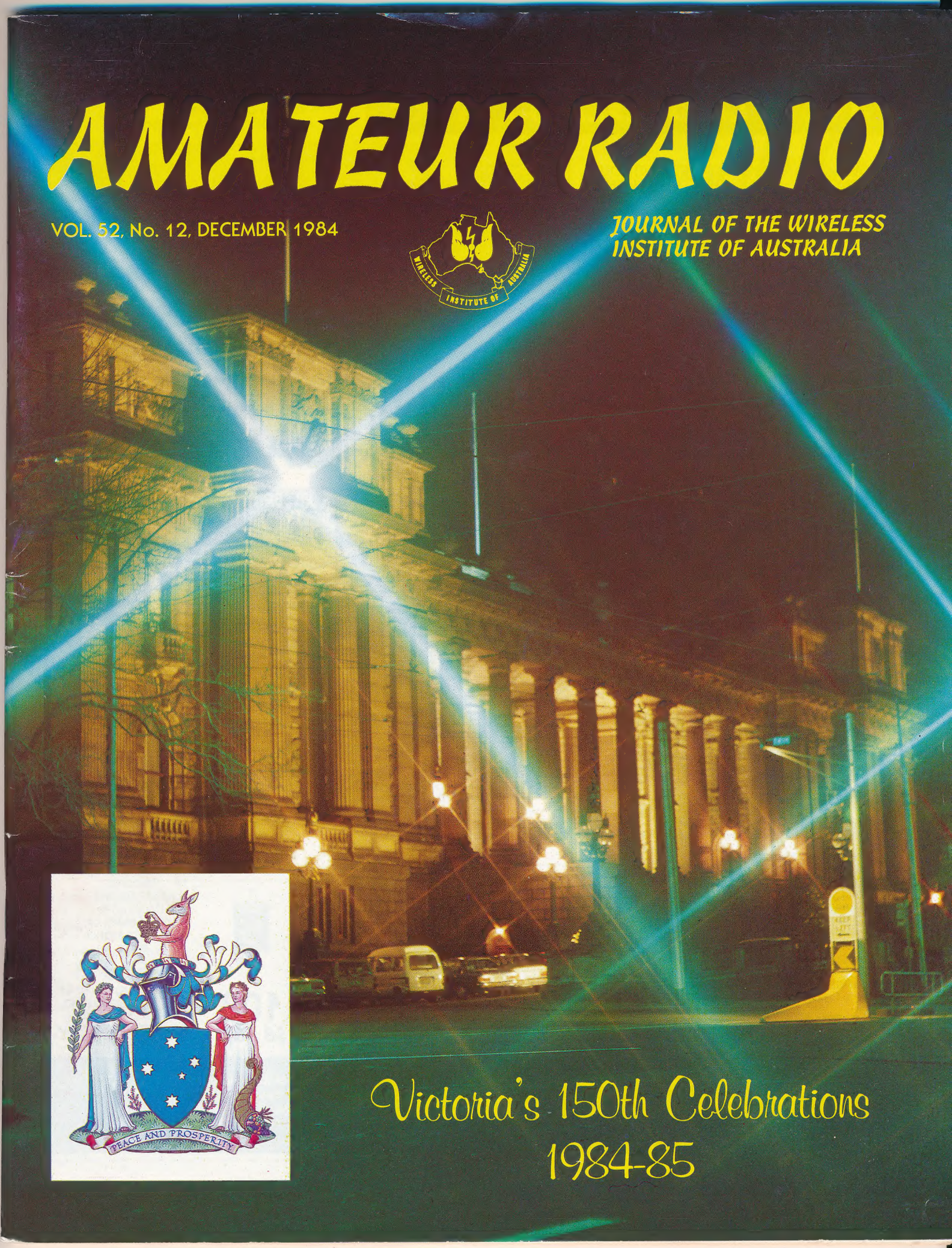
AMATEUR RADIO

VOL. 52, No. 12, DECEMBER 1984

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



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	CORE DIA mm	WEIGHT OF 200mm	TENSILE STRENGTH kg	CORE DIA mm	WEIGHT OF 200mm	TENSILE STRENGTH kg
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50-FB $2.20/m
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STANDARD C-8900

2m, 800ch, FM
0.15μV for 12dB
10 watts

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From 17th November, for 12 months, Victoria is celebrating its 150th Birthday. To celebrate this occasion the cover photo Parliament House with the Victorian Insignia in the lower left corner.

Photograph by Ken McLachlan VK3AH

AMATEUR RADIO

Published monthly as the official journal by the Wireless Institute of Australia, founded 1910. ISSN 0002 — 6859. Registered Office: 3/105 Hawthorn Road, Caulfield North, Vic. 3161. Telephone: (03) 528 5962.

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This magazine is a special bumper issue to provide readers with plenty of holiday activity.

There are plenty of advertisements to help with the present selection for Christmas — advertisements are needed to help supplement members' subscriptions to produce a larger and varied magazine which members have come to expect.

There is ample general reading and construction articles too.

By now most members will have received their subscription renewal notices. Please remember to pay promptly to ensure continuation of your magazine as back copies cannot always be guaranteed.

A questionnaire has been included with the subs notices this year. Much thought has gone into these questions to attempt to find out what the members of the WIA would like to see in their magazine. Please take five minutes out to fill it in and return it with your subs repayment — to help us to help you!

As you renew your subs — do you know any amateurs who are not members of the WIA? As the magazine needs advertisers so too the WIA needs members. You may care to suggest they contact their Divisional Office or the Federal Office for more information.

Deepest sympathy is extended to fellow amateurs Rijiv Gandhi VU2RG and his XYL Sonia VU2SON on the tragic loss of Rajiv's mother, Indian Prime Minister, Mrs Indira Gandhi.

The production crew wish all a happy and safe Festive Season and we look forward to your continued support next year in the form of articles, photographs, etc.

BKP

DEADLINE

All copy for February 1985 AR must arrive at PO Box 300, Caulfield South, Vic 3162 at the latest by midday 3rd January 1985.

★ Cartoons in this issue by Bill Martin VK2EBM

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Material should be sent direct to **PO Box 300, Caulfield South, Vic 3162**, by the **25th of the second month preceding publication. Note: Some months are a few days earlier due to the way the days fall. Phone: (03) 528 5962**.
Hamads should be sent direct to same address.
Acknowledgement may not be made unless specially requested. All important items should be sent by certified mail. The editor reserves the right to edit all material, including letters to the Editor and Hamads, and reserves the right to refuse acceptance of any material, without specifying a reason.

Trade Practices Act: It is impossible for us to ensure the advertisements submitted for publication comply with the Trade Practices Act 1974. Therefore advertisers and advertising agents will appreciate the absolute need for themselves to ensure that the provisions of the Act are complied with strictly.

Victorian Consumer Affairs Act: All advertisers are advised that advertisements containing only a PO Box number as the address cannot be accepted without the addition of the business or residential address of the box-holder or seller of the goods.

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Tel (03) 560 2222

Typesetting by: B-P Typesetting
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Photographic film and processing material courtesy AGFA-GEVAERT LTD AUSTRALIA

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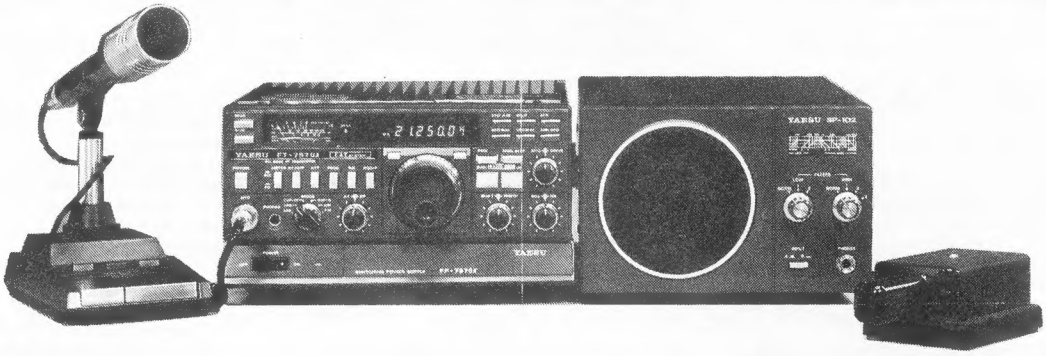

HF Transceivers

FT980 – all mode; 12 memories; general coverage Rx.
FT757GX – all mode; 8 mems; all normal options installed; gen coverage Rx.
FT102 – three 6146B's PA; optional AM/FM unit.
FT77 – 100W mobile.

VHF/UHF Transceivers

FT726R – all mode; 10 memories; 10W output; two VFO; can hold three modules (2m, 6m, 70cm, 21/28m modules) plus satellite IF unit; AC/DC operation.
FT480R – all mode 2m; 10W.
FT208R – handheld 2m; 2.5W; keypad entry.
FT203R – handheld 2m; 2.5W; thumbwheel; optional headset/mic and VOX operation.
FT290R – all mode portable 2m; 2.5W.
FT230R – mobile 2m FM; 25W; 10 memories
FT209RH — handheld 2m; 5W.
FT790R – all mode portable 70cm; 1W.
FT730R – mobile 70cm; 10W; 10 memories.

Linear Amplifiers

FL2100Z – 160m-10m; 1200W max input.
FL2050 – SSB/FM 2m; 70W out for 12W in; 12dB receiver amp.
FL2010 – 2m; 10W out; suits FT208, FT290, etc.
FL6010 – 6m; 10W out; suits FT690.
FL7010 – 70cm; 10W out; suits FT708, FT790, etc.

Antenna Tuning Units

FC700 – suits FT707/77; inbuilt 150W dummy load.
FC757AT – automatic; suits FT757/FT980; inbuilt 150W dummy load.
FC102 – handles up to 1.2 kW.
FAS-1-4R antenna selector (4-way).

External VFO

FV700DM – suits FT77/707; 12 memories.
FV102DM – for FT102.

Transverters

FTV901R – suits FT901/902, FT101Z.
FTV707 – suits FT707/77 (takes one module).
– 6m, 2m, 70cm modules for above.

Power Supplies

FP700 – suits FT77, FT757.
FP575GX – switch mode.
FP757HD – heavy duty.
FP7 – 3 amp.
FP107 – internal power unit for FT107M.
FNB-2 – NiCad pack for handhelds.

Chargers and DC/DC adapters

NC-8; NC-3A; PA-2; PA-3; etc.

External Speakers

SP107 – suits FT107.
SP102 – suits FT102, FT726, FT757GX; has filters.
SP980 – suits FT980; has filters.
SP55 – general purpose.

Also we have range of Commercial *handhelds and mobiles aproved by DOC. Low and high band VHF, VHF Marine handheld, UHF handhelds and mobiles.*

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Transceiver Accessories

AM/FM units; keyer units; WARC band mod kits for FT101Z, FT107, FT901; FIF-232C (RS232 interface); extender boards; mobile brackets, etc.

Microphones

MD-1B8 – desk type with scanning.
MH-1B8 – hand mic. with scanning.
YE-7A – hand mic.; 4-pin; 600 ohm.
YD846 – hand mic.; 50 kohm.
YM36 – hand mic.; noise cancelling.
YM40 – for FT480, 680, 780.
YM47 – for FT290, 690, 790, 230, 730.
YM49 – speaker/mic. for FT290, 690, 790.
YM24A – speaker mic for handhelds.
– 4-pin, 6-pin, 7 & 8-pin plus and sockets for above.
– 8 conductor curly mic. cords.
YH-1 – headset/boom mic. for handhelds and mobiles.
– SB-1, SB-2, SB-3 switches.

Semiconductors

We have large range of spares for Yaesu equipment.

Emotator Rotators

103SAX, 502SAX, 1102MXX, 1102MSAX, 1103MXX, 1103MSAX. Rotator accessories – 301 bearing, bottom clamps, couplings, 6 and 7-core control cable.

Morse Keys

hand keys, 'Bug' key, manipulator, Katsumi electronic keyer.

Coaxial Cable

5D-FB, 8D-FB, RG58U

Headphones

YH55 – with earmuffs.
YH-77 – lightweight.

Receiver

FRG7700 communications receiver, all mode.
FRV7700 VHF converters; FRT7700 antenna tuner; FRA7700 active antenna; memory unit.

Ham Clock

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Filters

CW, CW (narrow), AM, SSB (narrow) for HF and FT726R transceivers.
Filter FF501DX (30 MHz LP).

Service Manuals

for most transceivers and FRG7700.

Vacuum Tubes

572B, 6JS6C, 6146B, 6KD6, 6JM6, 6GK6, 12BY7-A.

Oscarblock

power/SWR dual meter – up to 150MHz.

SWR Meters

T435N fwd/ref power dual meter – 146 and 435MHz; 'N' connectors.

Antennas

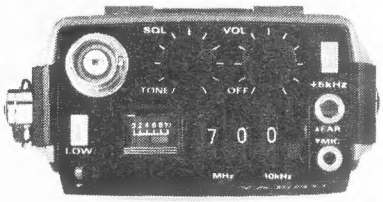
Hidaka VS33 triband; VS73SR UHF 7.8dB mobile; VS73GH 70cm gnd plane; VS27GR 144/435MHz mobile; LB607 6m log beam. Yaesu RSL series for HF mobile; RSL145 2m 5/8W mobile; RSL145 2m gnd plane; RSL 435 70cm colinear; spare antennas for FT290/690; YHA-44D halfwave antenna for 70cm handhelds.

NEW 2m FM HANDHELDS from YAESU

FT203R

2.5 watt
144-148 MHz

VOX operation with optional YH-2 Headset.



Thumbwheel Channel Selection.

PA-3 DC/DC Car Adapter/Trickle Charger (option)

FT209R

3.5 watt/350 mW

FT209RH

5 watt/500 mW

Microprocessor controlled
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★ YAESU FAS — 1-4R 4 pos. ant. sw. $99

YAESU FT — 209RH with FNB-4, charger, rubber ducky, c/case $399

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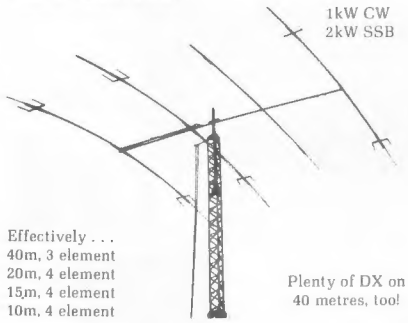
2kW SSB



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20m, 4 element
15m, 4 element
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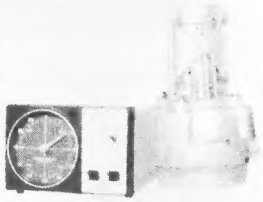
- KR-2000RC, 2000kg/cm **$449**
  6-core control cable **$1** per metre



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★ HL-160V25 25W-160W. FET pre-amp, 2 mtrs $329
★ HL-110V 3/10W-120W, FET pre-amp, 2 mtrs $289
★ HL-85V 10W-80W, GaAsFET rx, 2m Linear .... $Call
★ HL-62V 10W-60W, GaAsFET rx, 2m Linear $149
★ HL-35V 3W-30W, GaAsFET rx, 2m Linear $109
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a word from your EDITOR

DECEMBER SONG

In the Australian radio amateur's calendar December must rate as the most notable month of all. It marks the season of sporadic E propagation on 6 metres, and temperature inversions extending range tremendously on the higher frequency bands. The limited licensee, able at best to work a few hundred kilometres with the help of a repeater during the rest of the year, suddenly finds contacts possible around Australia with S9 signals both ways — until the other station drops out, sometimes in mid-transmission, perhaps to be replaced by another from the opposite side of the continent or even overseas.

Appropriately then, it is the season of the Ross Hull VHF-UHF Contest, in which for five weeks the keen Dxers on those bands vie with each other to work the most and farthest.

Nature gives us this propagation privilege with one hand, and exacts a penalty with the other. Those of us accustomed to night-time armchair chats with our full licence or Novice friends interstate on 80 metres find more often than not that the static crashes from summer thunderstorms have overwhelmed all but the loudest local signals.

In the tropical north the cyclone season gets under way; and few buildings and antennae will survive should one's QTH be in a cyclone's path. Who can forget Christmas 1974? Is it really 10 years ago when Darwin was well-nigh demolished by Tracy? Then, amateur radio helped maintain communications for the days needed to restore the telephone system. In the southern states the risk of bushfires increases with each successive summer day.

Our ability to help in such emergencies is developed best by practice; and December is THE month for WICEN practice, at least in VK2, 3 and 5, when our Civil Emergency Network provides communications for the Red Cross Murray River Canoe Marathon between 26 and 31 December.

And for almost all of us, December is the holiday month, when we may find time for all those amateur activities dreamed of during the working year. Antenna building (or re-building), equipment up-dating, portable or mobile operations from exotic places, not to mention Ross Hull or WICEN participation. Perhaps even enough time left over to write an article about it for AR!

On behalf of the Publications Committee and the AR production team may I wish you all a happy December, a Merry Christmas, and a prosperous (75th Anniversary) New Year.

Bill Rice VK3ABP
Editor
AR

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ENQUIRIES

Dr D. Wardlaw
Federal President
Wireless Institute of Australia
PO Box 300
SOUTH CAULFIELD VIC 3162

Dear Mr Wardlaw

I refer to our letter M83/037 of 7 June 1984 concerning the conditions applicable to operation by amateur stations within the band 50-52 MHz.

As you will be aware, the Minister has recently announced that use of Channel O by the SBS in Melbourne and Sydney has been extended until 5 January 1986. Due to this change, it is necessary that the planned implementation date for use of the 50-52 MHz band in South Australia and Tasmania (condition (d)) be correspondingly revised. Accordingly, condition (d) should now be amended to read:

(d) *South Australia and Tasmania

(i) 50 - 50.15 MHz - Operation restricted to a maximum transmitter output power of 25 watts p(X)

(ii) 50.15 - 52 MHz - Operation restricted to outside the broadcast hours of Channel O stations

*This condition will not become effective until after the SBS ceases its transmissions on Channel O, Melbourne (i.e. 6 January 1986). Until that time the operating conditions as set out in (c) will also apply to South Australia and Tasmania.

It would be appreciated if you could arrange for the amendment outlined to be publicised via the Institute's usual channels.

Yours faithfully

K. Cohen 9/10/84

for Secretary

PRESIDENTIAL COMMENT

Season's Greetings from the members of the Executive and the Federal Office.

As we come to the end of 1984 and are about to enter 1985, our Seventy-Fifth Anniversary Year, it might be opportune to ask the questions — *Why was the Wireless Institute of Australia formed? Why has it continued to exist? And what is its value?*

Back in 1910, when radio was in its infancy, a group of enthusiasts felt that, with their common interest in amateur radio experiments, it would be to their advantage to band together.

This society would give them the opportunity to exchange ideas and to collectively look after their interests in the radio field.

The same reasons for the existence of the WIA then still apply today, although the telecommunications explosion has made the issues much more complex.

In common with organisations formed in the early years of the century, the WIA was a Federation of State Institutes. It has remained so throughout its life to the present day.

Let us take a look at how the WIA has fared in the furtherance of its objectives.

The exchange of ideas is enhanced by the publication of "Amateur Radio", a magazine of which we can be justifiably proud.

In looking after the interests of radio amateurs, the WIA is recognised by the authorities of their spokesman. One of the manifestations of this recognition was the WIA's official participation in both WARC 59 and WARC 79.

Over the years negotiation has allowed considerable liberalisation of the conditions governing the amateur service. For example: The removal of the mandatory requirement for log keeping — very practical with mobile operation.

Of course the WIA must always seek to look after the interests of all radio amateurs.

Naturally there will not always be agreement as to the methods the Institute should use. This is to be expected in an organisation whose structure is as diverse as the WIA and also because of the multiplicity of facets of amateur radio.

It is to be hoped that the WIA will always remain flexible enough to meet any challenge, not forgetting we are dealing with a lot of issues at many different levels.

In addition to the national exchange of ideas by means of "Amateur Radio" magazine, the WIA, through its Divisions, presents to and helps its members with many facets of amateur radio. It provides help and instruction for those wishing to become licensees and also helps provide an interface with the rest of the community.

The value of the WIA is shown by its continuing existence and growth.

The WIA needs members and the members need the WIA.

On behalf of the Federal Office and members of the Executive I wish you the Season's Greetings.

David Wardlaw VK3ADW
Federal President

AR

RADIOCOMMUNICATIONS ACT

Standards under the Radiocommunications Act 1983

The *Radiocommunications Act 1983* is expected to come into force at the beginning of 1985 when it will replace the *Wireless Telegraphy Act 1905*.

A most important provision of the new Act — is section 9 which empowers the Minister to make standards, known as Ministerial standards, for transmitters, receivers and radio-sensitive devices. Such standards may relate to the design, performance or construction of such equipment.

Transmitters for which Ministerial standards can be made include not only radiocommunications transmitters, but anything capable of radio transmission. A Ministerial standard could thus be made for industrial machinery which emits spurious radiation.

Under section 11, the use or possession of a sub-standard transmitter and the supply of a sub-standard transmitter, receiver or radio-sensitive device is an offence attracting a maximum penalty of $10,000 ($50,000 in the case of a corporation) and imprisonment for five years. It is proposed that when the Act comes into force, Customs Regulations will prohibit the importation of sub-standard equipment.

In accordance with sub-section 9 (11) of the Act, Ministerial standards may adopt all or part of a standard proposed or approved by the Standards Association of Australia (SAA) or other prescribed body. A number of SAA standards relating to radiocommunications equipment currently exist and these are observed by industry on a voluntary basis. However, until an SAA standard is adopted by a Ministerial standard it will not have any legal force. This means, for example, that it would not be an offence under the Act to use a transmitter not complying with an SAA standard if it were not adopted at least to some extent by a Ministerial standard.

Sub-section 9 (2) provides that before making a Ministerial standard, the Minister must publish it and allow at least one month for public comment. When a Ministerial standard has been made, it must be laid before each house of Parliament, which then has fifteen sitting days in which to disallow it. Ministerial standards will not operate retrospectively.

Test permits to use or possess sub-standard transmitters may be issued by the Minister in accordance with section 10. If a transmitter is not the subject of a Ministerial standard this in itself means that the transmitter is not sub-standard, and that a test permit to possess or operate it would not be required. However, a radiocommunications transmitter licence would still normally be required if the device were such a transmitter.

Section 12 of the Act provides for the issue by the Minister of compliance statement certificates, which authorise the application to devices of statements certifying that they comply with specified standards.

The range of equipment covered by standards will grow gradually as they are developed and proceed through the process of public consultation. Existing Department of Communications specifications will be gradually transformed into standards by this process and, until that time, they will continue to define the technical requirements applying to licensed radiocommunications services.

The first standards are expected to cover:

- cordless telephones
- low power headset communicators
- children's toys such as walkie-talkie radios and remote-controlled models
- auditory training devices
- remote-controlled garage door openers
- emergency position indicating radio beacons (EPIRBs)

AR

Getting into Novice Bands OR Making Friends with Sam Morse

Bob Davis, P29ZRD
11 McKellar Road, Launceston Tas.

There is no doubt that many members of the WIA with SWL numbers and limited calls would dearly like to experiment and communicate in the HF Bands. They have the technical competance to do so, only the Morse code holds them back.

In larger centres classes with like-minded enthusiasts are excellent, because feedback from the instructor and fellow students is immediate. In more isolated areas WIA Education offers excellent tapes, and feed-back can be obtained when you feel competent enough to send them a tape. The problem here is that the receiving is usually more of a problem than the sending. The 80 metre Broadcasts are good when and where they can be received; but they are for practice – you must know your Morse alphabet first.

Remote and house-bound prospective novice amateur calls have a problem of obtaining good tapes of the speed they need – slow Morse, but with reasonably fast symbols that sound like the real thing. People with Morse computors (or Morse paper tape cutter and readers) have a real advantage here. It's nice to have a typewriter, also.

How can we tackle our objective – Morse at 5WPM; good enough to satisfy our friendly examiners (and when you have exam nerves before the test remember that they are our friends – they are there to test us for competance, they won't fail you if you can do the job).

Don't set yourself a time limit. Three lots of 20 hour weeks in a college which teaches Morse will get most people there. On the other hand a toddler who is told the sounds of Morse code with his ABC and Sesame Street would possibly pick up his licence at the minimum age after ten years of gentle coaching. Apply for the test only after you are satisfied that you are quietly confident that you have made it.

Get the WIA "Learn the Morse Code" tapes with text. If after a while you think you know the text by heart and your code still isn't good enough, buy a different set of tapes. You may be pleasantly surprised!

Then aquire, from WIA or others, some mixed plain text and random symbols at the speed you need. I would suggest 6WPM – it is 20% faster than you need, and when you can tackle 5WPM with great confidence. Read the 80 metre Slow Morse Programme if you can receive it.

Don't use your Morse key until you know the alphabet and numbers. It is frustrating to be sending only part of the alphabet – and after you know your alphabet you will find that you know what good Morse sounds like, and you will instinctively try to imitate. Most operators can send faster than they can receive (a disaster on air!), so speed in sending will probably not be your problem.

It doesn't matter whether you send in the American or Australian position — find the position most comfortable to you. If you are buying a key, get a good solid one. The American key has a low sending knob, and can be used at the front or back of the desk, the Australian key has a much higher sending knob and feels more solid in use, is generally harder to find in the shops, and is more suited to the Australian position-key at the front of the desk, elbow off the table top and by your side. I have an American key firmly bolted to the back end of my audio oscillator — a suitably butchered and modified transistor radio. This stabilizes it fore and aft without bolting it to the desk, and I have no trouble using the Australian sending position with it. I would like to suggest that the sideways operating key paddles are left until you are more experienced, they are more suited to high speed use.

A note on the code itself. Sam Morse managed to fit the shorter "easy" symbols into his name, the same way possibly that the designer of the standard typewriter keyboard has all the letters of that word in the top letter line — QWERTYUIOP! All inventors have their own licence!

Morse teachers are divided between alphabetical order, or rhythmically related order, or something between. They are also divided on the use of a memory jogger (or mnemonic card, or crib) in the early stages of learning; showing the alphabet and numbers together with some visual analogue of the dits and dahs. I preferred to use one, it is quite handy up to 6WPM. If you intend to go further later, be careful not to use it as a crutch — the sound of the Morse must be firmly in the mind to go much faster.

My layout was similar to that below, with the dits and dahs drawn under each letter/number —

	i	s	h	v	5
		u		f	4
e					3
	a	r		l	2
		w	j	p	1
	m	o			0
		g	z	q	9
t					8
	n	k	c	y	7
		d	b	x	6

The only combination signals required for the Morse test are those for commence, out, and error. Because some of my tapes have all the punctuation in them, I added the following combinations in three rows of seven. I find I now know most of them.

OPERATIONAL AND PUNCTUATION COMBINATIONS

1		2		
CT	Commence	NNN	Semicolon	;
AR	Out	AAA	Fullstop	.
IMI	Repeat	GW	Comma	,
SK	Endwork	VU	Dollar	$
AS	Wait	KN	Open Bracket	(
BT	Break =	DU	Dash	—
HH	Error	R	Roger or Decimal	.

3		
RR	Quotation	"
XE	Slant or Franction	/
IMI	Question Mark	?
OS	Colon	:
KK	Close Bracket	)
WG	apostrophe	'
K	Go Ahead (over)	

You could add SOS, CQ and DE (or V)

How can you tell the speed that is being sent? Time off a minute of the script. Since one word is five letters or two-and-a-half numbers/combinations, count the letters as 1 unit, numbers etc as 2 units marked on the script. Ignoring the space between the words, divide the number of units by 5 and you have words per minute. This assumes an average mix of symbols and words which is of course what is normally sent.

You may claim that age has slowed your learning process, and you cannot pace younger operators. This may be true, but time is not the essence, is it? At your chemists or health food outlet are two traditional herbs which you may find will help. They are Ginsing and Gotu Kola, sometimes sold separately and sometimes in combinations, with or without Vitamin E. Both herbs taken regularly or irregularly, are claimed to slow the aging process and to increase mental power and memory. If you try them see if you can positively identify any improvement in your ability to learn. I make no claims on this one!

Finally, NO, I am not an expert on Morse, just a learner on the other side of 45. And YES. I have passed my tests at 5WPM, to whom I thank all who helped, knowingly or unwittingly. I am looking forward to meeting other ex Z's and L's with a key in my hand on the HF bands.

AR

THE ROYAL OMANI ARS

This society has announced a programme of special events, contests and field days.

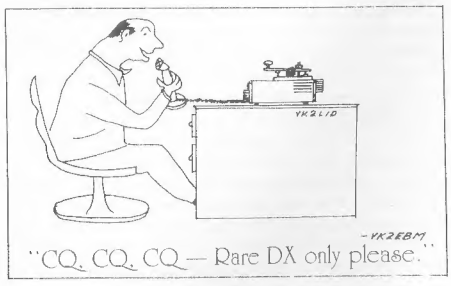
The ROARS Club Contest is a twelve hour event on 7th December 1984 from 0500 to 1700 UTC. Four Oman clubs — Muscat, Salalah, Thumrait and Masirah Island will be competing.

The ROARS annual individual operators contest will be held from 0400 UTC 20th December to 2000 UTC 21st December.

There will also be an Oman field day held in January/February 1985 but dates and times are, as yet, not finalised.

The society guarantees plenty of activity on the bands from Oman during these events.

Mohd Bin Marhoon Al-Baluchi A4XKF
Special Events Organiser
AR



THUMBNAIL SKETCHES

Alan Shawsmith, VK4SS
35 Whynot Street, West End, Qld 4101

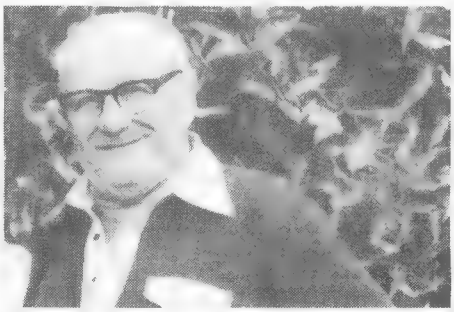
W (BILL) CHITHAM, VK4UU

Bill first obtained his license on 11th March 1932 in Brisbane and during the years pre-WWII was very active. Not only did he make a name for himself in his right (he was a very competent DXer, homebrewer and A1 operator), he was also a member of the illustrious 'U' gang. This was a group of active and informed amateurs who lived within a couple of streets of each other and were bonded together by the fact that each one had the letter 'U' as part of his suffix. This writer recalls they usually occupied the front seats at the WIA meetings of the period, and when the occasion demanded, were audible and outspoken.

Bill's interest in AR was nourished by his SWLing during part of his teenage years 1927-1932. He first went on air using a TPTG Hartley oscillator. From this one tuber he graduated to three and four stage rigs using PP 210s in the final. His excellent sending fist and his first class note, in days when obtaining T9 wasn't easy, is still clear in my mind.

VK4UU was a member of the WIA and served on the Queensland Divisional Council from 1934-39, during which time he held the positions of Treasurer and QSL Officer. Bill says he remembers attending ADs (Annual Dinners) at the Astoria Cafe in Edward Street and in Atcherley House, Petrie Bight, Brisbane.

Explaining the creation of the 'U' gang, VK4UU makes the point that it was never really a Club — simply a very active group that came about in the following way. When Bill got his ticket, he asked for the letters 'UU' because of their CW rhythm and, as



the other chaps in the area obtained their licenses, they too requested that the letter 'U' be part of their calls. The end result was nightly activity from Jack VK4UR, Charlie VK4US (now retired at the Sunshine Coast with the call VK4QM), Paul VK4UL and finally Bernie VK4UW.

Along with many of his contemporaries, VK4UU enlisted and did a four and a half years stint in WWII, serving in the combat areas of Milne Bay, Finschhafen and Lae.

Post-war to the present time he has been active only spasmodically. His main interests now are a little gardening and fishing when he feels up to it. In a letter to me, Bill's final comment is worth recording. He says, *"AR does not have the thrill it had in the 30s (pre-war) . . . there was no coarse language on air (as happens now) . . . by the year 2000 AD amateur radio will not exist as we know it now."* A comment that will be supported by many.

Note on 'U' Gang

WWII caused the demise of this very active 'U' gang. From a close knit group of five, all living and operating almost within sight of each other, their post-war commitments were such that they never really got together again. VK4UL is now SK. VK4UW has QSBd from the scene and can't be traced. VK4UR and VK4US (now 4QM) are both active and VK4UU, the original member and founder is now seldom on air. This writer has recently spoken with them and all agree that the Halcyon Days of AR are gone, or going!

AR

SUBSCRIPTION RATES AND JOINING FEES 1985

	ACT	NSW	VIC	QLD	SA	WA	TAS
Bona Fide Student	$23.50	$24.50	$25.00	$13.00	$19.00	$20.50	$13.00
Pensioner	$24.50	$24.50	$25.00	$24.50	$25.00	$24.50	$24.50
Associate Member (No Callsign) Metropolitan Country	$34.00	$29.50	$32.00	$30.00	$33.00	$30.50	$31.50
Full Member Metropolitan Country	$34.00	$31.50	$39.00	$30.00	$35.00	$31.50	$31.50
Plus Joining Fee	—	$4	—	$3	—	—	$1

Family Member (eg wife) without AR — deduct $11.76 from appropriate full or ass rate, except:
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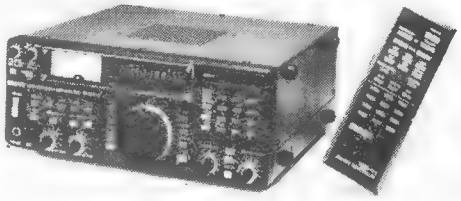
Subs subject to confirmation.

THE WORLD SYSTEM FOR HF PICK-UP



If you're serious about HF receiving, you will appreciate the features this all mode receiver offers. Key pad entry, 32 memories, scan–the famous ICOM tuning system, and all in the palm of your hand. You see the R71A can be remote controlled from the comfort of your arm chair. ICOM even provide the option of a voice synthesizer. You need to see this radio now.

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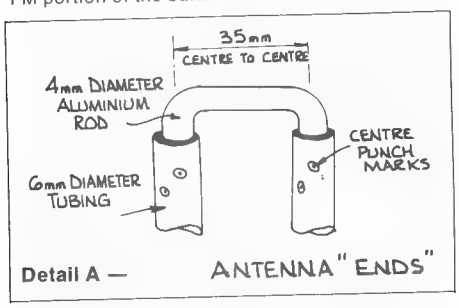
"SLIM JIM" — 3CO VERSION

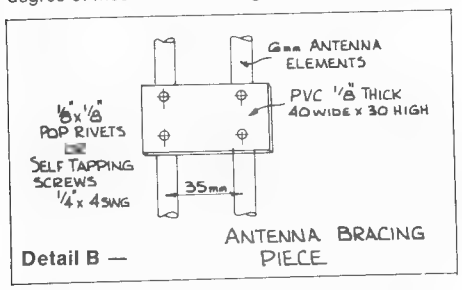
Desmond Greenham, VK3CO,
16 Clydesdale Court, Mooroopna, Vic. 3629

It was in Practical Wireless April 1978 that the "Slim Jim" 2 m vertical antenna first made its appearance. This was an article by the designer F C Judd G2BCX in England. Since that time many "Slim Jims" have been constructed using many different ideas from wire coat hangers to television ribbon. No doubt all have worked to a varying degree.

In 1980 Mr Judd published a book, "2 m Antenna Handbook" and naturally, he included his now famous "Slim Jim" antenna. For some reason, known only to himself, the dimensions were different to the original article. Working on the assumption that the dimensions in his later article were the more correct, this updated version has been converted from the original English frequency of 145 MHzs to a frequency that is more suited for use in Australia on the FM portion of the band ie 147 MHzs.



The construction closely follows the Judd design except in a few minor details. The material used in 6 mm diameter aluminium tubing with end pieces being 4 mm diameter aluminium wire. The antenna is mounted on PVC conduit approximately 40 mm diameter. This is not critical and any convenient insulation material can be used even a lowly 1" diameter hardwood broom handle. The bracing strap mounted in the top section of the antenna is a piece of PVC or similar, 40 mm x 50 mm. This provides a degree of mechanical bracing to stop "whip".



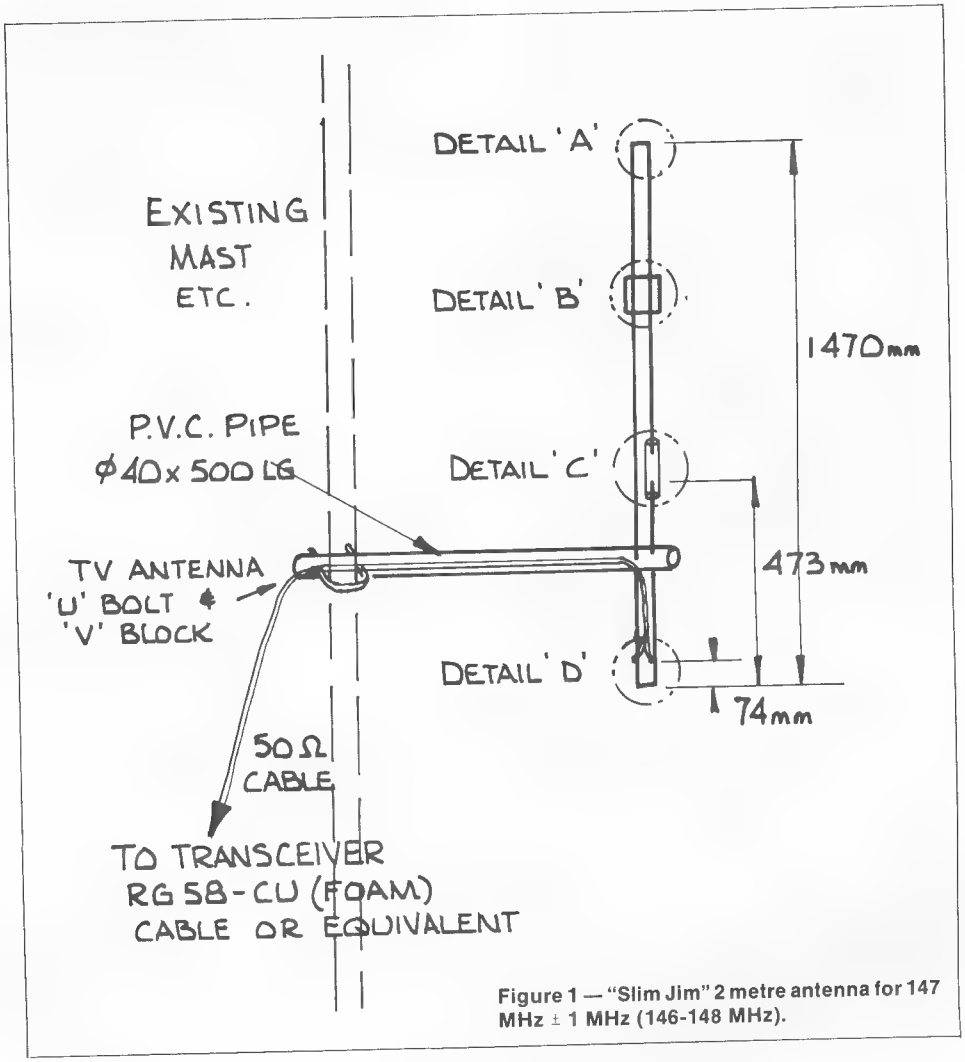


Figure 1 — "Slim Jim" 2 metre antenna for 147 MHz ± 1 MHz (146-148 MHz).

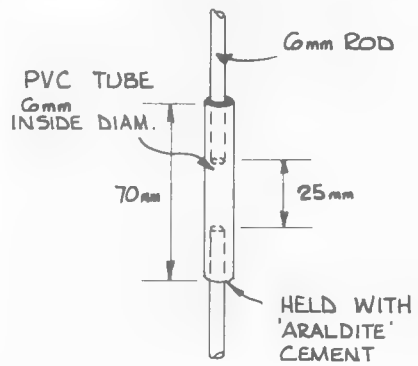
The ends of the antenna are made from two short pieces of 4 mm alumunium rod bent in a "U" shape and driven into the tubing. It may be necessary to drill out the ends to the correct size. After insertion of the ends and correct alignment of the structure, the ends are fixed by applying pressure in a vice and "centre punching" both sides of the 6 mm tube. This provides an adequate connection that will give no trouble. The use of different metal rod, say, brass or bronze, is not recommended because of electrolytic corrosion that will occur causing later problems.

The main antenna is fixed through holes drilled in the PVC pipe and secured using a liberal application of "five minute Araldite". A similar method is used for the insulation separater. This is a piece of Polythene tubing of 6 mm *inside* diameter. The body of certain ball point pens can be used here if tubing is not available! This is also secured using Araldite or similar.

After construction the antenna can be clamped to any mast using a standard TV antenna "U" bolt and "V" block assembly. The co-axial cable used *must* be of good quality. If cheap cable is used, the gain obtained in the antenna will be lost in the feed cable. The newer "Foam" type cables are recommended such as RG-58.CU or RG8 foam. Connection is made using small solder tags and self tapping screws into the tubing. (½" x 4 are very suitable). The co-axial cable ends should be tightly taped with PVC tape to keep out moisture. The antenna should finally be mounted at least three metres above ground and the ultimate length of cable connected. The SWR should be checked using a good bridge and adjusted if necessary by moving the connection points either up or down. In most cases the connection point shown will be correct and return an SWR figure of 1.4 or better. The cable should be run along the PVC stub and then down the mast. This prevents the entry of water into the cable thus damaging it.

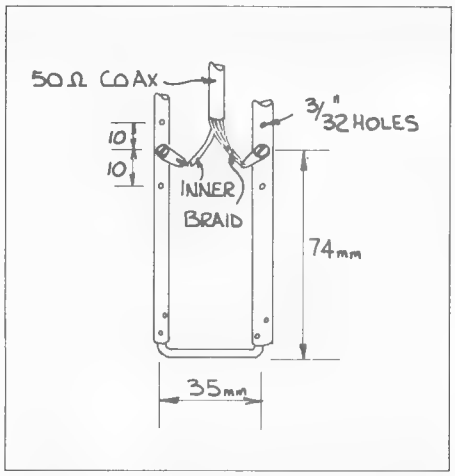
The antenna performs well and is omni-directional. It has been found to have considerable gain over a standard ¼ wavelength and is very comparable to a ⅝ wavelength working in perfect conditions. The "Slim Jim" requires no ground plane and is most suitable for use on existing masts, poles, etc. In common with all VHF antennas, the best results will be achieved when the antenna is mounted "in the clear" at the maximum possible height.

In the original article on the "Slim Jim" the author, G2BCX claimed improved efficiency over the ⅝ wavelength ground plane antenna. He stated, "*The*



Detail C —

'Slim Jim's' vertical angle of radiation is almost parallel to the ground, so maximum radiation is therefore straight out (and all round) which is what we want. With all ground plane aerials, radiation is tilted to an average angle of 30° or more. By comparison this antenna can be 6dB more effective." Whatever statistical claims are made, the "Slim Jim" is a good and effective antenna that is easily constructed and the many that have been made over the years bears witness to its proven performance.



Detail D —Cable feed details — Set at 74 mm point and check SWR. Move both connections either up or down to achieve better match. Less than 1.4 can be achieved at 147 MHz.

It is noted that the name "2BCX Slim Jim" is copyright and the design by the original author, F C Judd, is acknowledged.

AR

WARNING OVER NEW BATTERY

The Royal Automobile Club of Victoria has warned about maintenance free automobile batteries being potentially dangerous unless they are charged correctly after going flat.

The RACV general manager of public affairs, Ray Barlett said this type of battery has exploded following a rise in its temperature when using the "fast charge" method.

He said serious injuries could be received in the event of a battery exploding.

The RACV said maintenance free types should not be fast charged where the specific gravity was less than 1:100 because the temperature of the battery rose due to the large current flow.

The charging process should also be stopped if the battery temperature rose above 60 degrees celsius.

PORTABLE COMPUTER WITH FULL-SIZE PAGE DISPLAY

Data General in the United States claims to have the world's first full-page size liquid crystal display portable computer.

Called the Data General-One Personal System, it's the company's first entry into the personal computer market.

It's aimed at the fastest growing segment of the market — briefcase size, battery operated computers — but will be marketed as an all-around office, home, and portable computer.

The "One" has a full-size 25 line, 80 character liquid crystal display screen.

The next largest screen available is believed to be the 16 line screen on Hewlett-Packard's Portable.

The Data General-One basic model costing $US2895 includes 128 000 characters of memory, a built-in modem, and a 9 cm floppy disk drive.

Memory can be expanded to 512 000 characters and a second floppy disk drive may be added.

Company officials said the computer was fully compatible with IBM's best selling personal computer and can use most of the thousands of applications programmes written for the IBM machine.

ELECTRONIC BROKER-TO-BANK LINK

Deals between brokers and banks in London's foreign exchange and currency deposit markets will be confirmed electronically from early next year.

The Foreign Exchange and Currency Deposit Brokers' Association (FECDBA) which has employed Hoskyns, the computer services company, to manage the Automated Confirmation Service (ACS) project, believes that the world lead by London in this field will be adopted by other financial centres for faster and more accurate recording of transactions between brokers and the dealing rooms of banks.

In London 130 banks will be participating in the scheme. Hand-delivered and telex messages are to be superseded by coded confirmation suitable for computer processing.

Three electronic communications systems developed in the UK have been chosen for the service. These will enable banks to receive confirmations either directly through British Telecom's general purpose data communication network (Packet Switch Stream) or by electronic mail (Dialcom). For both methods equipment ranging from a small printer to a large mainframe computer may be used. When electronic mail is chosen the customer enters a password on his terminal to collect messages from a "mailbox" on a central computer.

Additionally, British Telecom is making Netmux, a new facility available to ACS users, before it becomes generally available. This will allow some banks to have access to Packet Switch Stream through a special unit installed in the local telephone exchange. Methods chosen by customers will depend on the volumes of business and urgency of communication.

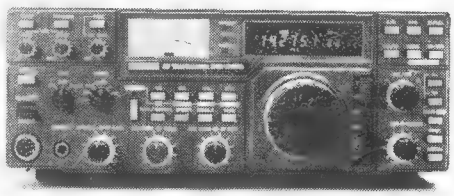
ACS will be able to handle the 50,000 deals between banks and brokers involving billions of pounds which take place in London on an average working day.

FECDBA believes that the system will help to keep London in the forefront of the world's financial centres by replacing what it describes as "cumbersome and potentially inaccurate manual methods" with a fast, accurate and secure service of confirmations.

from Information Technology from Britain — August 1984

AR

THE NEW WORLD CLASS OF HF



Who would have believed that ICOM engineers could have improved the IC-720A. Now, not only do you have features such as the general coverage receiver, but now, in the IC-751 you get all modes including FM, transmitter incremental tuning (XIT), scanning and of course the tuning system made famous by Collins. Perhaps the most amazing fact is the 105 dB dynamic range, offered by the new J-FET ICOM front end.

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A HORIZONTAL LOOP ANTENNA

Bruce Hannaford VK5XI.
57 Haydown Street, Elizabeth Grove, SA 5112

Over a period of years the writer has tried many different HF band antennae often giving each a year or so of use before trying something different. For the past year he has been using a large horizontal loop with quite good results and would like to pass on this very useful design. The main advantages of this antenna being that it will work quite well on all bands from 80 to 10 metres including WARC bands, it need not be very high, will give good all round horizontal directional coverage and the feeder impedance will be low on all bands harmonically related to 80 metres.

To obtain the biggest size loop possible I avoided using poles with guy wires and originally just tied one and a half inch water pipes to the fence at each corner of the back yard. With this type of construction you get the maximum size loop for your size yard but it is not possible to use much tension on the spans of wire and considerable sag will be experienced.

I have improved on this construction since then but still use the 7 metre lengths of water pipe now additionally having about 1.5 metres of round timber driven into the top end thus increasing the height to about 8.5 metres.

The poles are at each corner of the yard which is about 28 metres square thus giving a loop of about 112 metres total length.

An approximate formula for a loop like this is — length in feet = 985 divided by frequency in MHz. Thus for 3.6 MHz a length of 274 feet will be required. *length in metres = 300 divided by frequency in MHz. For 3.6 MHZ a length of 83.33 metres.*

In my case I only have 240 feet, 73 metres, so am 34 feet, 10 metres short. This could be corrected by using loading coils. These must be put at a high current point. Or by making use of a 17 feet, 5 metre; length of open wire feeder.

I have tried inductive loading but now prefer and use open wire line. One advantage of the open feeder is the ease in resonating the loop by pruning the feeder without needing to change the size of the loop itself.

Of course if you have room for a full size loop by all means use it or only use a very short open wire feeder for tuning convenience.

Initial tuning is done by using a one turn coil to couple a dip oscillator to the antenna at its feed point. The feeder or antenna are then pruned to give a dip at say 3.6 MHz.

The feed point impedance in the harmonically related bands will range from about 100 ohms on 80 metres to about 200 ohms on 10 metres and these figures may become lower if the antenna is very close to the ground. Using a 4:1 balun at the feed point and continuing to the transceiver with 50 ohm coaxial cable the SWR will be low enough to be easily dealt with by an ATU.

With all connected as mentioned but not yet using an ATU try the SWR at various points in each band and carefully list the results. From a study of the SWR figures it should be easy to decide if any pruning is needed. If you do any pruning check all bands once again listing results as before. A compromise length will be found that gives reasonably low SWR on all bands without an ATU.

One comment I often get is — "*But a horizontal loop will be directional straight up and down and there will be poor low angle radiation.*" Thinking about quad design this is a valid first impression statement.

This horizontal loop will in fact have a great deal of straight up radiation on 80 metres but this will normally be reflected back at this low frequency and good results will still be obtained. On 40 metres additional lobes are generated and these are still at a rather high angle but likewise will normally be returned to earth at fairly distant points.

As still higher frequencies are used the number of

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THROW AWAY YOUR ANTENNA TUNERS
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3.5 MHz – 30 MHz **THE BLACK CTW ANTENNA**

FEATURES
: Automatically tunes every frequency without adjustment.
: Power – 400 watt PEP Higher powers to specification.
: Absolutely no tuning and no traps.
: Very low VSWR typically less than 1.5:1 over entire range.
: Tests indicates lower noise levels than conventional dipoles.
: Supplied with a PL239 UHF socket to match 50 ohm feedline.
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VERTICALS – Free standing fibreglass antenna 10 metres high (electrical length = 16 metres). No guys needed, light and strong. Supplied as 3 slip together sections.
– Aluminium tube style, minimum height of 10.06 metres supplied and guyed by customer, Black Products supplies electrical components and energizing details.
– Radials are not needed with these verticals.
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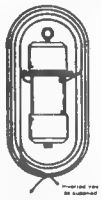

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★★ EASILY adaptable at a later date to other bands with modification kit
★★ SMALL, low profile. +13.8V operation (10A) designed with HF Mobile use in mind
★★ POWERFUL — 50W PEP minimum output from a robust VMOS Push-pull Power stage
★★ SENSITIVE design + MULTI-POLE crystal IF SSB filter for high performance
★★ SCHOTTKY high level RF/Mixer stage = High Dynamic Range (Two Tone 90dB +.100kHz separation)
★★ EASILY assembled single printed circuit board design, buildable by any competent constructor
★★ EFFECTIVE variable threshold Noise Blanker — greatly reduces Woodpecker etc.
★★ CONTINUOUSLY variable front panel drive control SSB/CW -4W to maximum power
★★ EFFECTIVE low-distortion adjustable Speech Processor built-in
★★ SIMPLE to operate while mobile — also totally effective as a Base Station
★★ BUILT-IN audio filters for clarity of received signals and high quality Transmitted signal
★★ 4/5 digit DIGITAL Readout with 1kHz resolution — dual speed smooth tuning control
★★ PROFESSIONAL appearance high quality steel case and mobile bracket
★★ MINIMAL in-band Spurii — PLL VFO + built-in Preselector & PA Harmonic Filtering
★★ ACCURATE S-Meter and excellent AGC characteristics for either SSB or CW

Front panel controls are AF & IF GAIN, BLANK LEVEL/BLANKER ON-OFF, DRIVE/MANUAL Tx-Rx, POWER ON-OFF, Filter OUT-NARROW-WIDE (Optional filter), Mode SSB-TUNE-CW plus mic/PTT socket, indicator LED's and Rx/Tx meter, plus digital display. REAR PANEL — SO239 (ant), POWER, EXT SPKR, KEY.

KIT OPTIONS: *The ALPHA is only available in the following options, for EITHER 160m (1.81-2.0MHz) or 20m (14.0-14.35MHz). (We can supply a conversion kit from one band to the other if you want to change at a later date — we will also have 80 and 40m versions later). size; 210W x 245D x 60H.*

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lobes will increase and the angle of them keeps getting lower to the horizon. By the time we get to 10 metres there will be quite a lot of low angle radiation. All of this is much the same as for a long wire antenna except this long wire is bent around thus dispersing the many lobes in many different horizontal directions.

Of course as the loop is close to ground we will not see the rather sharp free space lobes we would otherwise expect and it will be found, in practice, good all round coverage will be obtained in all bands. The height is not very important so long as the antenna is reasonably clear of absorption problems such as trees etc. I have heard of people using heights as low as 1 metre and can personally vouch that 4 metres is quite workable. I have gone for extra height only to get into a clear space.

This antenna will not equal a rotary beam but it will work efficiently on ALL HF bands. With the no guy wires type of construction it is quite neat in appearance and, in the eyes of most neighbours, much better than a tower with a beam and numerous dipoles to cover the other HF bands.

I now submit a list of my SWR results for your guidance and comparison. I think you will agree that for an ALL HF BANDS antenna the results are quite good and compare favourably with that old favourite, the G5RV. The following readings were obtained from the 50 ohm side of the 4:1 balun, I will just list the frequencies and follow these with the SWR in each case.

3.55, 2.0; 3.6, 1.1; 3.7, 2.0; 7.0, 1.2; 7.1, 1.1; 7.2, 1.8; 7.3, 2.6; 10.1, 2.9; 10.15, 2.6; 14.0, 1.6; 14.1, 1.9; 14.2, 2.0; 14.3, 3.0; 18.1, 4.5; 21.0, 1.9; 21.1, 2.3; 21.2, 2.7; 21.3, 3.0; 21.4, 3.5; 24.9, 3.5; 28.0, 2.5; 28.25, 2.9; 28.5, 4.00 & 28.75, 5.0.

Well the figures tell their own story and of course you can prune to suit the bands or portions of bands you most often use. With an ATU added the above SWR figures could in all cases be easily brought down to 1:1 and even the frequencies with the worst SWR gave very effective radiation and reception. As the length of coaxial cable used was quite short the losses at even 5:1 SWR were negligible. Without the balun the SWR was in almost all cases much higher and in some cases as high as 9:1.

When part of a loop is made up of open wire feeder or loading coils the harmonics of the lowest possible full wave loop frequency will not be exact multiples of this fundamental frequency and even if a full sized loop is used they will be only approximately multiples of the fundamental frequency. I will give the dip frequencies that I got in my case giving first the harmonic number then the frequency. These were taken at the end of the open wire feeder without the balun in place. It will be noticed that unlike dipoles both odd and even number harmonics are useful with loops and this is very handy indeed. 1 3.75 — 2 7.32 — 3 10.85 — 4 14.11 — 5 17.5 — 6 20.85 — 7 24.4 & 8 28.1. I note that pruning to get the dips close to the amateur band centre frequencies is not the best procedure, it is best to prune for a low SWR.

An alternative design for such loops is to bring the open wire feeder into the shack and use a balanced ATU followed by coaxial cable to the transceiver. With this design it is not really necessary to use any special length of wire in the loop just make it as large as possible and the ATU will take care of resonating it at any frequency.

It is possible to use TV ribbon instead of the open wire feeder but I don't recommend this if high power is to be used. Virtually any spacing open wire feeder can be used as this is not critical in any way.

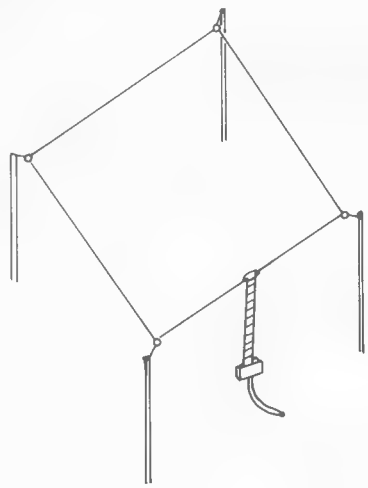


Figure 1

HORIZONTAL LOOP ANTENNA

A square loop is shown but any reasonably open shape will be satisfactory. The feedline is shown in the centre of one side however other positions such as a corner will be almost as good. The coaxial cable can be any length but shorter lengths are preferred due to fairly high SWR on some bands.

Technical Editors Note.

This antenna is an interesting approach to the problem of getting out from a suburban area with limited space. The aim is to talk to other amateurs rather than lead the DX dogpile.

Caution should be exercised in the choice and rating of the balun used. Most baluns have power ratings which are only valid for low SWR. When a balun is used at higher SWR values it should be derated. The higher currents and voltages may result in undesirable effects. These are due to possible saturation effects in ferrites, heating of wires, and insulation voltage levels.

As a result of this at high SWR values a balun may have to be derated.

This article has been converted to metric measurements.

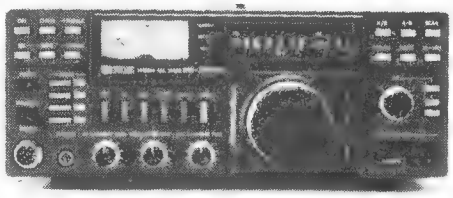
Technical Editor

NOTICE

ALL copy for inclusion in February 1985 Amateur Radio must arrive at Box 300, Caulfield South, 3162 no later than midday 3rd January.

The advertisers of AR wish all readers a very Happy Christmas and look forward to your continued custom in 1985.

THE WORLD CLASS 2 METRE BASE



Do you remember the IC-211? The boys at ICOM do. You see, it set the pace for 2 metre base station performance many years ago. Optically chopped tuning, processor control, digital PLL, and many features at that time unheard of. In 1984 ICOM are still setting the same high standards for 2 metre base station performance. Dual VFO's, multi mode, 10 Hz PLL tuning are a few of the basic features. This world class radio is supported by a large range of options, many can be seen at your local ICOM dealer.

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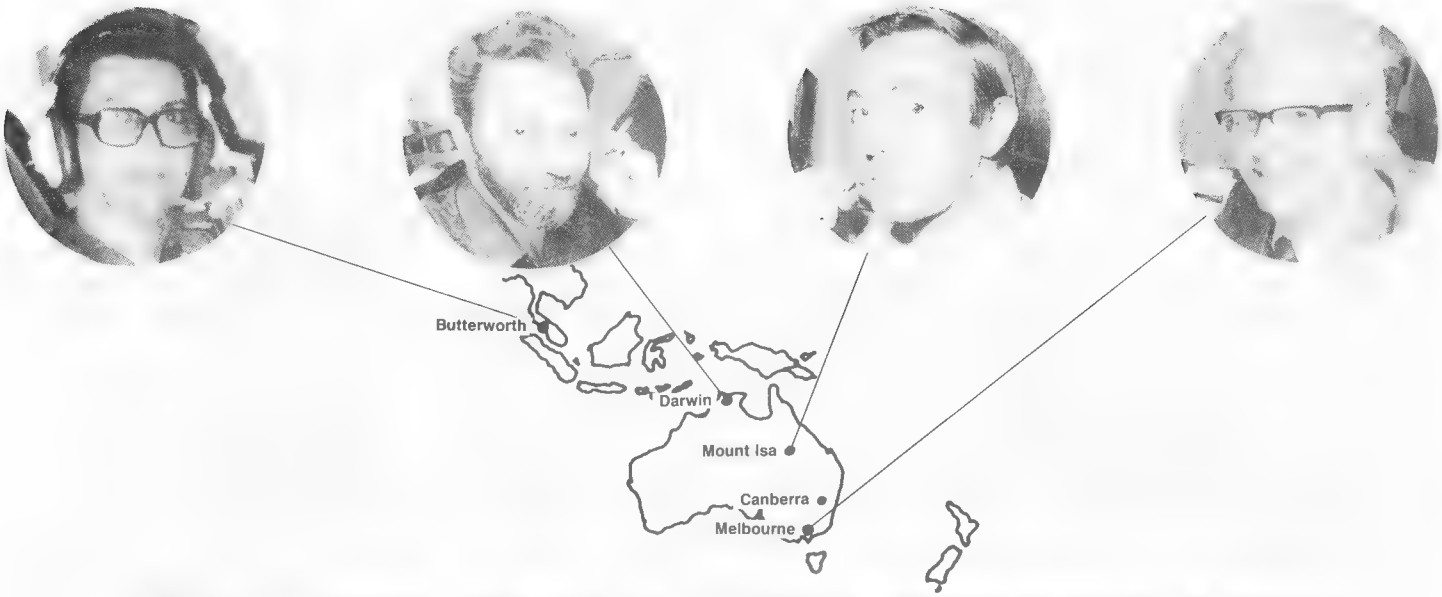


CYCLONE TRACY 10TH ANNIVERSARY

Jim Linton VK3PC,
4 Ansett Crescent, FOREST HILL, VIC 3131.

Tracy's 240kmh (150mph) winds hit Darwin at 4am, Christmas Day, 1974. She immediately killed at least 44 people, injured 1000, left 25,000 homeless and destroyed or badly damaged 95 percent of the city. Power and communications were cut. A radio amateur in Darwin and another in Melbourne linked Darwin with the outside world. This is the first time their stories have been told.

THE SLIM JONES STORY

Slim, ex VK8JT now VK6ATJ, vividly remembers the moment Tracy hit his home in the Darwin suburb of Tiwi.

"My strongest recollection was the insulation being sucked up out of the roof like paper ribbon.

"Three of us, my wife, and 78-year old sister-in-law sheltered in a passageway which was the strongest part of the house.

"The ceiling came in, the roof was gone, and using a torch I was trying to attract the attention of a rescue squad knowing they would be out.

"We thought we had been the unlucky ones — little did we know the whole city had copped it."

The first part of his house to go was the radio shack with all of the equipment, teleprinters, and test gear being made useless.

Slim said the day before he had used a crane to put up a tower with a four element quad which, as it turned out, never went on air.

The Jones' lost all personal belongings including an extensive library, and irreplaceable items such as photo albums, and a stamp collection. Their home was only half a mile from the sea and the torrents of water dumped on the house by Tracy was salt water.

"Tiwi was a new suburb. We moved into it in July — and Tracy moved us out in December," said Slim.

As a Supervisor with the Federal Department of Housing and Construction he had been alerted about the cyclone as part of his job.

"On the Christmas Eve we had the cyclone warning, but couldn't contact anyone because of the festive season.

"I was trying to locate people to tie down their sites and secure loose building materials," he said.

Slim, a cyclone veteran having been through eighteen on land, and two at sea in the China Sea and the Caribbean, described Darwin as the worst.

"I have never seen anything like Tracy — and don't want to again.

"The totality of destruction amazed me — I had seen the blitzes in the UK during the war — but had never seen a complete city destroyed," he said.

On Christmas Day morning the Darwin Community College became home for many people who had lost their homes. The Jones' took shelter there for three months.

Slim recalls a technician named Garry trying to get an antenna tuner to work for a Yaesu rig and how he (Slim) decided to cut a Vee antenna.

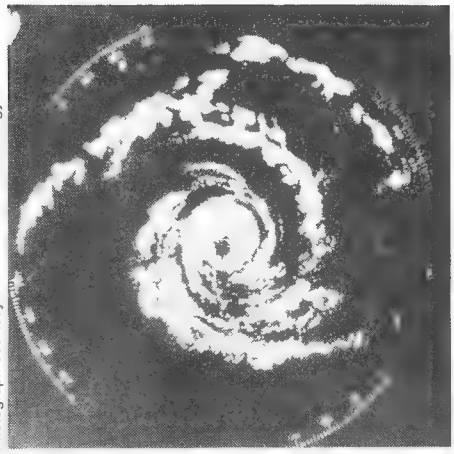
He had been a Radio Operator/Navigator in the French Legion, and Radio Operator/Surveyor in the Spanish Legion, and holds a Merchant Navy General certificate of Competency in Radio Telephony.

After getting the rig on air and making contact with Ken McLachlan VK3AH, Slim went to the local police station advising them of the link with Melbourne and police welcomed the idea.

This began an incredible 78 hour on-air stint by

Photograph courtesy Herald & Weekly Times

Almost complete devastation of buildings and the stripping of leaves from the trees in the wake of Tracy. This picture was taken in a northern suburb of Darwin.



Photograph courtesy the Bureau of Meteorology.

The intensity of Tracy shown by a radar photo taken at 0415 on 25th December 1974, with the eye of the cyclone directly over Darwin Airport.

Slim with the Radio equipment being declared an emergency station and two policemen assigned to assist its running.

The policemen helped authenticate messages, and delivered them by car to various parts of Darwin.

How did Slim keep going? *"Catnapping at the mike, and the kids were bringing me lots coffee and food,"* he replied. *"A nurse was also pumping me with antibiotics for my throat.*

"I asked Ken in Melbourne to be the controlling station for the emergency.

"I had enough to do to keep the station on air, let alone cope with being in control," said Slim.

The first messages were the body counts relayed to Victoria Police Communications via VK3AH.

Slim said he was also in contact with Mt Isa to keep the first relief plane up-to-date and to find out what was on board the Hercules so it could be properly received on landing.

THIRD PARTY TRAFFIC

He recognised the need to handle Third Party Traffic — then not permitted in Australia.

Doing the right thing he sought approval of the Postmaster Generals Department (function now of DOC) but an officer denied him permission.

"He told me the regulations were quite clear on the matter," said Slim.

"A telegram was sent to the Postmaster General and the Prime Minister.

"History-making permission was then given to handle Third Party Traffic telegrams containing personal messages up to twelve words of a health and welfare nature," he said.

Later a WICEN station was set-up in Melbourne and other capital cities to handle Red Cross and Salvation Army Traffic, he said.

Slim made direct contact with Canada and Kuala Lumpur to pass brief Third Party Traffic originated in Darwin.

After the initial 78 hours Slim worked shifts of 0600-2300 operating VK8JT for eight days including communicating with Gove, a bauxite mining town and port on a peninsula which is isolated by road during the wet season.

To help him keep on air Ian Hunt VK5QX, organised an FT401 and other equipment to be flown to Darwin.

The Jones' stayed with the Hunt family for a while before settling in Adelaide where they lived for nearly two years.

Slim now lives at Port Hedland on Australia's northwest coast where he's a Port Control Officer.

THE KEN MCLACHLAN STORY

After having Christmas dinner Ken McLachlan VK3AH, went to his shack looking for a 7Q7 friend on 20 metres to wish him seasons greetings.

"I came across VK8JT asking if anyone could hear him. Swung the beam up — and then all hell broke loose. He told me Darwin had been devastated," he said.

Ken told Slim to stay on air while he contacted the authorities, first action being to ring the Officer In Charge at D24 police communications. Within seven minutes a police sergeant was sitting alongside Ken in his shack.

What were the very first words from VK8JT? *"We've been wiped out by a cyclone. We've got dead people, injured, we want supplies, we want this, we want that,"* Ken recalls.

For the next 36 hours the McLachlan's suburban cream brick-veneer home became a disaster communication centre.

He said the types of messages handled were the health and welfare requirements of Darwin residents, the equipment they needed, and the getting of National Disaster Organisation Director-General, Major-General Alan Stretton to the disaster scene.

RELIEF EFFORT

When initial contact between VK3AH and VK8JT was made an RAAF Hercules Transport plane was being loaded with relief supplies at the Richmond Airbase, New South Wales.

The aircraft transported four surgeons, three anaesthetists, two RAAF medical teams, 10,000 pounds of comprehensive medical equipment, and Maj-Gen Stretton.

At Darwin Airport people worked frantically to clear runways of rubble including wrecked aircraft to allow the Hercules to land.

Ken was also in contact with Mal Westwood 9M2ML, who relayed messages to the Butterworth Airbase in Malaysia, which had airforce HF frequency communication with the Hercules.

The Hercules travelled via Mt Isa in northwest Queensland and reached Darwin early on 26 December.

The three-way link between Darwin, Melbourne, and Malaysia ensured the plane had confirmation of the runway being cleared of debris, and was used to signal the lighting of flares showing the plane where to land.

Weather information obtained from the Meteorological Bureau in Perth was also transmitted to the Hercules while it was en-route.

Ken praised Slim for his spirit and actions in setting-up communications in very difficult conditions.

"I don't know how the first plane would have got down without the help of Slim, and Mal 9M2ML," he said.

The relief effort could have been delayed many hours if the plane had not been able to safely land in darkness early on Boxing Day.

On Boxing Day morning the McLachlan's home was under siege as television news crews, other media representatives and police vehicles lined the street outside.

Access to the property was barred by police who told the media to go away.

Oblivious to the 'media circus' outside his home was a bleary-eyed Ken receiving the names of deceased for police to contact relatives and next-of-kin.

EMERGENCY TRANSMITTER SPARES

The intense period of handling traffic on Christmas Day showed on Slim's voice and it was faltering, Ken recollects.

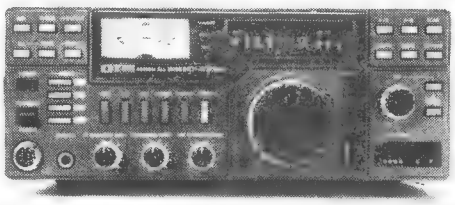
"Slim's voice started to go so Terry Stewart VK4AAT, who was in Mt Isa, sent his XYL Joy down to the chemist.

"Throat lozenges were obtained, wrapped up and marked 'EMERGENCY SPARES FOR TRANSMITTER' to be delivered to Slim at Casaurina.

"When the Hercules landed at Mt Isa, Terry made sure the 'SPARES' were put on board.

"That helped keep Slim on air — he got them about 45 minutes after the plane arrived at Darwin," said Ken.

THE WORLD CLASS UHF BASE STATION



An amazing 75 watts at 430 MHz. Think of it, Moonbounce DX at UHF? ICOM's 471H provides you with the opportunity of controlling one of the most advanced base stations of its kind. VOX, all modes, noise blanker, RF pre-amp and much more.
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EQUIPMENT REVIEW

Ron Fisher VK3OM,
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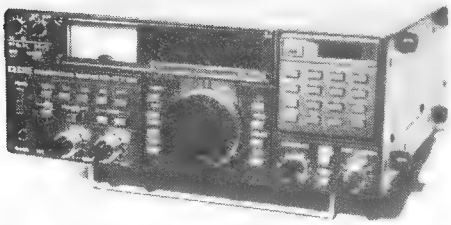
THE ICOM IC-R71A RECEIVER



If the Icom IC-R70 receiver had a few short-comings, the new IC-R71 has certainly put most of these to right. The superb performance of the R70 has seen that receiver in use in many professional locations running twenty four hours a day month after month. However reference to the review of the R-70 in the September 1983 issue of Amateur Radio shows that there were some strange ommissions from the operating facilities. The lack of a memory system was odd to say the least. Icom transceivers released much earlier had a memory system of sorts and although not perfect, the IC-R70 did not even get the benefit of this.

However this is all changed. Just look at what the R-71 has. First off, thirty two tuneable memories. Direct entry frequency selection via the front panel key board. Variable rate continuous tuning from 100kHz to 30MHz. Remote control via an infrared hand held control unit, from an external computor interface, or over telephone lines for remote operation. A voice synthesiser is an available option for frequency readout for handicapped operators, or to feed information back to the operating point with a remote control set up.

Remote Control Unit.

In addition to all of this, most of the desirable features of the old IC-R70 have been retained. It is also interesting to look at the features that are shared with the two current Icom transceivers, the IC-751 and IC-745.

In appearance the R70 and R71 are much the same except for one important point. The front mounted speaker of the R70 has gone to make way for the direct entry keyboard of the R71. The internal speaker is now in the more usual, but not so satisfactory, location in the top of the cabinet. Well you can't have everything and probably most operators prefer an external speaker anyhow. The RIT control of the R70 has gone and certainly won't be missed. The memory selector control now occupies this position.

The two VFO system has been retained and combined with the memory selector gives the operator an incredibly versatile tuning set up. Of course all reception modes are available, but with FM as an option as usual. Narrow CW and a high grade SSB filter are among some of the other options available, but more of this later.

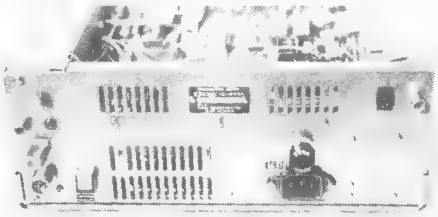
The R71 also has a scanning facility for either the memories or a programmed band scan.

Primary operation of the R71 is from AC power mains of 100, 117, 200, 220 or 234 volts, 50 or 60Hz. Operation from a 12 volt DC source is possible with the optional DC cable kit.

THE IC-R71 IN OPERATION

As the Icom advertising says, 'The Best Just Got Better'. Yes and no. Let me start off by saying that it is very hard to level any real criticism at the R71 but a few points of complaint with the old R70 have been carried over and some of the new features come in for a bit of adverse comment. In general terms though, the receiver performs in superb fashion and having recently tried a couple of receivers in the $4000 price bracket from European origin the R71 runs rings around them in most (not all) aspects.

Setting up the R-71 is quite straight forward. Two antenna input connectors are provided, one for reception below 1.6MHz using a high impedance antenna, the other a standard S0239 connector providing a 50 ohm input right across the whole received frequency range. A change over switch selects the required impedance for low frequency reception. Several other facilities are available on the rear panel. These include an output for a panadaptor scope, a tape recorder control terminal which is operated by the receiver squelch, and an external speaker jack which uses a now standard 3.5mm socket. Covered cut outs are included for the optional computer interface unit and the 12 volt DC input. A ground terminal, AC input connector and fuse holder round out the facilities.



Rear Panel.

The frequency and memory channel display used on the R71 are similar to the 751 transceiver. It is a very distinct blue white fluorescent type which displays frequency down to 100Hz resolution, the memory channel selected, the mode the receiver is switched to and the VFO (A or B) selected. The overall effect is excellent and is, without doubt, one of the best displays around at the present time.

Channel Display.

Selecting the required receive frequency can be accomplished in two ways. Firstly by using the key board. In this case the whole frequency down to the last digit (100Hz) point is dialled up, the enter button pressed and there you are. If an exact MHz point is required then it is only necessary to press (say) 07, then Enter and you are on 7MHz. Using the tuning knob, it is possible to tune continuously from 100kHz to 30MHz but it's possibly easier to push the 'Band' button where the tuning control becomes a MHz selector.

While on the subject of tuning, I have the same complaint with this that I had with the 745 transceiver. The only tuning rate available is the very slow 10 Hz step. Ah, I hear you say, what about the 50Hz rate and the 1kHz rate. Sure enough, but to select the 50Hz rate it is necesary to rotate the tuning knob at a fast speed while the 1kHz speed is perhaps OK for AM reception but is really too fast. There is no doubt that the slow 10Hz rate is great for tuning SSB but is far too slow for looking over one of short wave AM broadcast bands. Icom should provide a 100Hz tuning rate which would allow faster tuning for both SSB and AM reception.

As mentioned earlier, the memories are fully tuneable. To explain further many current transceivers with memory facilities allow a fixed frequency to be memorised. If you need to tune up or down from this, it is necessary to transfer this to one of the VFOs. You then lose the VFO frequency. With the Icom system, when a memory channel is selected just turn the tuning knob to shift frequency as far as needed. The original memory can be instantly recalled by selecting the next memory position and then return to original memory. This system gives the Icom receiver the ultimate flexibility.

One feature that will not please the keen listener is the shift in frequency when changing modes. This is noted when changing from upper to lower sideband. This produces a 3 kHz shift. Chasing weak AM stations on the short wave bands it is very often necessary to pick the sideband with the least interference. With the R71 you must tune either up or down 3 kHz every time you do this. I find this strange as the original Icom transceiver, the 701, had the ability to swap sidebands and remain on the same frequency. Why not now?

The filter selector switch is effective but rather confusing to use. Firstly the selectivity produced depends on the mode selected and, in any case, it is sometimes hard to see if the buttons are in or out. A simple three position switch would remove all the confusion. The notch and band pass tuning are retained in similar form to the older R70. The action of the BPT is handy to reduce interference and on SSB would, no doubt, be better with the optional FL-44A high grade filter.

The notch filter is reasonably effective on SSB and CW reception but is not available for AM. Perhaps a sharp cut off 5kHz filter could be added in the future for this mode.

The R71 provides three scanning modes. First it is possible to scan all 32 memories. Second, memory channels with a selected mode can be scanned and thirdly a programmed band scan can be set. With this, memory one and two set the limits of the scan.

As with the 745 transceiver, the scan system is useful to operate. For the scan to stop on a channel it is necessary to set the squelch control to a given point. The trouble is that this is different for each signal. Perhaps a better way would be for the scan to stop on each memory for a preset time and then resume. This would then give the operator a chance to evaluate what is on the channel and then stop the scanning process if required.

Like the R70, the frequency stability is superb, but if you require this same stability under conditions of extreme temperature fluctuation, a high stability master crystal is available Operating in a normal situation, the stability with the standard setup is beyond reproach. Maybe Icom could provide a 10Hz readout on their next model. The stability is quite adequate for this right now.

Perhaps one of the more impressive aspects of the R71 is the front end performance. The use of the attenuator was not required under any conditions encountered while operating the receiver and even with the pre-amp in, no trace of overload was detected.

The review R71 did not have the voice frequency readout fitted but luckily I did have access to an R71 with one fitted a few weeks earlier. The quality could not be described as good, but it is quite intelligible I have discussed the use of this with some of my sightless friends. They are unamimous in their praise for its inclusion, but would prefer that the operating button was placed clear of other controls. It is too easy for them to push the wrong button and hop to another frequency rather than get the voice readout. Just as a thought, perhaps it could be placed down near the phone jack.

The infra-red remote control unit was supplied and many hours were passed having fun using it.

To put it into use, the remote button must be pushed and then all control takes place from the remote unit. Power on/off, audio gain, mode selection, frequency selection from the key pad and memory channel selection are available. Even the voice readout is selectable. As to its practicality, I must leave this to the intending purchaser. Enough to say that it works and works well up to a distance of about five metres from the receiver, so try a bit of real arm chair copy. Noise blanker action has been up-graded over the R70 with the addition of a level control. The wide/narrow facility has been retained and the blanking action is usually satisfactory even with the Wood Pecker. The R71 however lacks the continuously variable ATC control of the IC-745 and so the fine tuning technique with the Woodpecker blanker is not available

THE IC-R71 CONCLUSIONS

The R71 is a receiver of the highest quality that will be at home amongst the top priced receivers from Europe and the USA. In fact if the choice was available, I would suggest that most operators would prefer the feel and handling of the R71. Icom have overcome most of our earlier complaints with the R70 but still have a way to go with others. I feel that most of our current criticisms could be put right at no increase in cost.

However there is little doubt that the R71 is in a class of its own. If you are in the market for a top grade communication receiver at an affordable price, look no further.

EVALUATION AND ON AIR TEST OF THE ICOM IC-R71 RECEIVER

APPEARANCE

Packaging **** *Excellent carton with foam inserts.*
Size *** *Same size as the R70 with more features.*
Weight *** *Quite reasonable. 7.5 kg.*
External Finish *** *Well finished, but rough paint finish tends to pick up and hold dust.*
Construction Quality **** *Up to the usual high Icom standard.*

FRONT PANEL

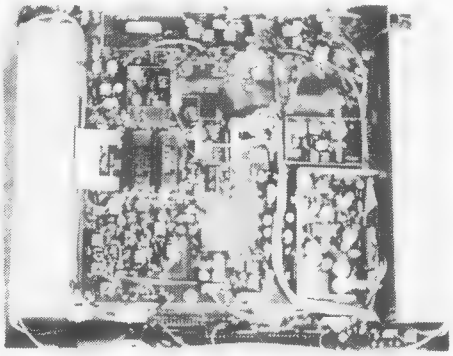
Location of Controls **** *Excellent layout.*
Size of Knobs & Buttons *** *Some concentric, but generally good.*
Labelling *** *Improved over the R70.*
'S' Meter *** *Good illumination. 'S' and Sinpo calibration.*
Status Indicators ** *Could use a few more.*
VFO Tuning Action ** *Not up to the R70. Tuning rates not well chosen.*
Dial Readout *** *Bright and clear. Needs 10Hz digit.*

REAR PANEL

** *With optional extras fairly comprehensive but little information supplied.*

RECEIVER OPERATION

VFO Stability **** *Impossible to fault.*
Digital Dial Accuracy **** *Within readout limits, spot on.*
Memories **** *With 32, it's top of the pile.*
Scanning * *Icom need to rethink this.*
Bandpass Tuning ** *Reasonably effective.*
Notch Filter ** *Useful but not up to others.*
'S' Meter *** *Realistic response.*
Signal Handling **** *The R70 was very good. This is better.*
Sensitivity *** *Quite adequate. Up to everything compared with.*
Pre-amp, Attenuator *** *Works well.*
RF Gain *** *Smooth progressive action.*
Tone Control *** *Well chosen top cut response.*
Noise Blanker **** *About as good as they come.*



QUALITY OF RECEIVED SIGNAL

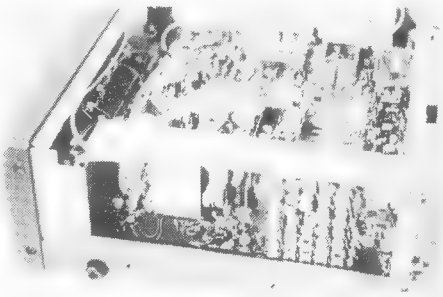
Internal Speaker ** *OK if nothing else available.*
Reception of AM ** *Have heard cleaner, but satisfactory unless you are a Hi-Fi buff.*
Reception of SSB *** *Very clean response.*
Reception of CW ** *Would no doubt be better with optional filters.*
Reception of AM (exalted carrier) ** *Would be better if frequency didn't change with change of sideband.*
Headphone Output *** *Stereo compatable.*
Audio Power Output ** *OK but could use a bit more.*

MANUAL

(Owners Handbook) ** *Covers operation well but generally needs more information.*

Rating Code Poor * Satisfactory ** Very Good * Excellent ****

AR



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When the engineers at ICOM designed the IC-47A, they knew you would have almost no room to mount it. Take a good look at the dashboard in your car. ICOM have packed a processor controlled, 25 watt UHF mobile into just 58 cubic inches. Think about it, your IC-22S is 87 cubic inches and it doesn't rank in the same class. The 47A offers 32 CTCSS frequencies, scanning, memories, even a speech synthesizer to aid blind operators.

ICOM
The World System
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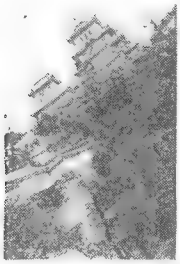


THE SHOGUN NEVER HAD IT LIKE THIS

Alex Efimov VK2DPY
Box 1, Teralba, NSW 2284

In September this year the author and forty four others, amateurs, their wives and friends, made a seventeen day holiday trip to Japan. They were accompanied by two local tourist guides, Paul Rodenhuis VK2AHB, a long time student of the Japanese language and Etsuko Howard, a Japanese national. Their aim was to see the country in the limited time available and to visit places of interest to radio amateurs including the JARL Headquarters and the Tokyo Electronics Fair as well as factories and the famous Akihabara Electronics City.

It used to be a long walk down the Tokaido attended by the nobles and the samurai — this time it was at 210 kmh plus, attended by the charming ladies of JNR the Japan National Railways aboard "Hikari" sometimes known as The Bullet.

Not that we didn't get plenty of chances to see much of what was left of the sights of mediaeval Japan. That's why we went. But it was called an Electronic Holiday in the promotional brochure.

The trip was to include a mix of culture and technology — the old and the new, so to speak.

All the preparations one considers necessary for such an event were made prior to leaving. What sort of clothes should one take? What's the food going to be like? What sort of gear can be brought back? Does anyone speak English in JA? How much is it all going to cost? Our tour leader gave us the answers. He told us as much as could be told in the newsletters sent out to the prospective tourists and for those in Newcastle we had a night of films and explanations. All were sent a tape of typical Japanese polite conversation. Paul is an old hand at making tapes and his major effort "QSO JA NOW!" has been the lever which has made it easy for many a VK amateur to conduct QSOs in Japanese. And I'd say he's pretty much an expert on travelling in Japan as well after our experiences. To make things just that little bit easier we took along one of our local residents Etsuko, XYL of VK2AKX. Well, we really didn't take her along, as she was in Japan when we arrived, but Etsuko came with us on the tour and as well as keeping the ladies informed of the best places to buy she came in handy when some of the translations got a bit difficult. She is a native of Tokyo and this helped a great deal.

We had plenty of time to go shopping and this was arranged for our last few days in the country so that we wouldn't have to carry our purchases around too much. Jewellery and watches were very popular.

Most tours of this kind start in the capital, Tokyo. Ours did the reverse. We arrived at Narita airport on 9th October but, since this is a long way from the city, we saw none of it. The plan was for us to transfer to an internal flight to Japan's western city Osaka and then by coach to Kyoto, the old capital. The weather was much warmer than Sydney so the modern air conditioned comfort of this coach was much appreciated as was the luxury of the hotel, right near the Kyoto tower. This proved a boon because, during two days in the heartland of cultural Japan, one could go walking and be sure they found their way "home" just by looking for the tower. They say there's a temple in Kyoto for every day of the year. The outstanding ones are so good that people come from all over the world to see them. The "thousand buddhas" temple falls into this category. It's amazing how magnificently preserved it is. You can see it on any number of travel posters on Japan but the brilliance of the gold on all the statues is hard to describe.

Those who were anxious to see the technological side were soon to get their chance for we next paid a visit to Icom in Osaka. We were amazed to find that, although this company has such a huge output, only about 300 people are involved in the actual factory. In the tradition of much of Japanese industry a large part of the work is let to sub-contractors with only the final assembly and testing routines taking place in the main plant. Nevertheless, the range of gear, most of it as yet unseen in VK kept all open eyed. We had a VIP tour here and quite a number had to get in the act with a photo in the Icom station. The other big attraction in Osaka is National Panasonic. Now this is tourist oriented and everything is done to impress. A "brainy" robot that can tell weight and lots of other things with just one handshake is probably the star. "He" even laughs, in a subdued Japanese way, when tickled! The whole range of the company's products is displayed right back to the very early days for it seems that Matsushita (which is the Japanese name for National) has been in this business for a lot longer than most of us imagined. While engaged in all this, those more culturally inclined went to the beautiful city of Nara to see the huge Buddha, the biggest bronze statue in the world, and the wonderful Kinkaju golden temple as it appears to float in its own lake.

With the first week now more than half over, we went by Shinkansen, the high speed bullet train to Himeji. As a train driver myself, I had a burning desire to see just what it would be like in the cabin. Thanks to Paul and Etsuko I made it and watched the driver and his observer chatting and smoking while this unbelievably smooth train left stations behind at 160kmh and sped along the main tracks at well over 210kmh with

Photo by Paul Rodenhuis VK2AHB

The tour group.

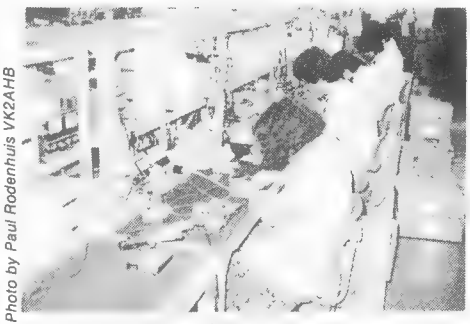


Photo by Paul Rodenhuis VK2AHB

Assembly line at Icom.

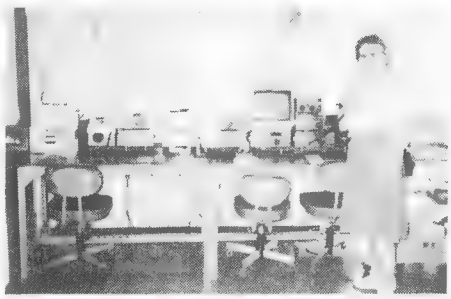


Photo by Paul Rodenhuis VK2AHB

Sue VK2BSB tries for some DX at the Icom station in the factory at Osaka.

Photo by Paul Rodenhuis VK2AHB

Alex VK2DPY in the driver's cabin of the Bullet train.

most of the decisions left to the central train control computer in Tokyo. This was really an unforgettable experience. But to be taken from this symbol of twentieth century efficiency right back into the feudal past in the White Heron castle was something else. This spectacular structure is almost all wood with stone ramparts. It's shoes off to go inside and, although it's a long climb to the top, the view is well worth it. It's not hard to imagine the history of while there. One half expected to see a samurai warrior emerge from one of the narrow doors. Next stop, again by magic train, Hiroshima.

As might be imagined this is a modern city, depending for most of its importance on tourism and the Mazda car factory. With two days here, we managed to see most of it. Toyo Kogyo (Mazda) is the envy of the world for its computer controlled assembly line which is programmed by sales figures and trends from around the world. It is the regular thing to see various models and colours along the same line, dictated by what the buyers want in the USA or other markets. Once again we were given VIP treatment and nothing seemed too much for our hosts. We were told that the citizens of Hiroshima can have a new car at regular intervals for a quite small sum of money and their old one. It isn't sold but recycled by the factory. In fact that was one thing which was quite remarkable about all the Japan that we saw — no old cars at all. The Peace Park and memorial is compulsive viewing while in Hiroshima and the whole place evokes such mixed feelings that one has to stay a long time to try to get it all in perspective.

The tour to Miyajima where the red "torii" gate is mirrored in the waters of the bay was a big attraction to some of the party. The shops everywhere in Japan are hard to compare. There are so many of them, many selling the same sorts of things and all open, it seems, every day of the week. The variety of food to be had is an invitation to try it all. We even found that McDonalds hamburgers were available in most places and, surprisingly enough, at a price almost identical with those at home. To anyone thinking about a trip like this, food is no problem.

Photo by Paul Rodenhuis VK2AHB.

Dilemma! Which way to go??

With western Japan completed, it was back to Tokyo. In all the 895km aboard the Hikari, Shinkansen, Bullet train there wasn't a dull moment. Trolleys of food and drink kept appearing all the time and there was a continual string of announcements, both in Japanese and English, to tell us where we were. The weather was good enough to see Mt Fuji during the afternoon. It really is just as beautiful as it looks in even the most glossy of the tourist photographs. There is so little movement on the train that taking photos of the mountain, or anything else for that matter is a breeze.

As well as all the usual tourist exploits we had some interesting schedules on our itinerary in the Japanese capital.

While some visited the near northern city of Nikko to see the autumn colours and the "three wise monkeys" shrine, the rest set out to look for bargains. It was hard to know where to start. A group soon found out how to use the Tokyo subway and, mostly by counting stops rather than reading the names, we managed to fine our way to Akihabara, "Electronics Paradise".

A visit to Toshiba was arranged and this was a real eye opener. And then there was a bonus. One of the group had had some dealings with JRC, the manufacturer of most of the marine equipment on the Japanese ships. As a result of this we had a chance to see round JRC. This was entirely different. Since it was a high security establishment we all had to have tags and our guide told us that there were some sections even he couldn't enter — obviously military oriented. The super quality of the gear was evident.

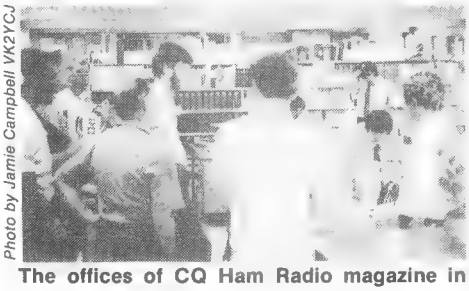


Photo by Jamie Campbell VK2YCJ

The offices of CQ Ham Radio magazine in Tokyo.

The JARL officials made us very welcome at the headquarters of the league and there were the inevitable presents for all concerned. We were introduced to the President Jiro Hara JA1AN and obviously had a closer contact with the governing body of the JARL than would be available to the local amateurs. Our tour of the headquarters then led to the "CQ Ham Radio" magazine section in the same building. My advice is that when you take your tour of Japan that you stock up on gifts which will be suitable as a response because it can be very embarrassing to have nothing to hand back in return for the extreme kindness and generosity of the host country. One tip would be to have on hand a good stock of "name cards" in the form of a miniature QSL. The exchanging of name cards is a ritual with Japanese.

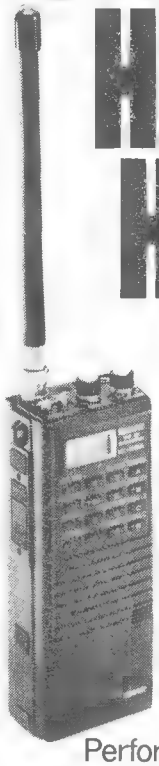
Of course, the place to meet everybody is at the Electronics Show and, since this was a visit we were all looking forward to, we made the best of it. As far as the trade is concerned this show must rate as the top in the world.

The last place we went to as an organised trip was Tokyo Disneyland. Having never been to the original Disneyland it is impossible to compare it but it certainly was a barrel of fun. All had a great time.

I've only been able to give you the briefest look at Japan in this account. There was so much to see and so many things to do it was hard to take it all in. The greatest benefit was however being able to travel with a group of radio amateurs. It was just like a super hamfest that lasted a fortnight. I don't think even the Shogun would have had it as good as we did.

AR

THE WORLD CLASS 2 METRE HAND HELD



ICOM built this portable to last. Did you know that the IC-02A can safely dissipate 5 watts* of power.

The IC-02A uses a modular output device making it extremely efficient, and very reliable.

Performance is better than one may expect for such a small package. Check it out at one of our distributors, ask him to demonstrate priority scan, the selectable steps and the other many features of the 02A, we think you'll be amazed.

*5 watts available with optional battery pack

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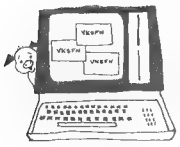


A BASIC PROGRAMME FOR QSL GENERATION

Marshall Emm, VK5FN
Box 389, Adelaide, SA 5001

The programme listed herewith is a "quick and nasty" solution to the problem of producing legible QSL cards. The programme was written because (a) there always seemed to be fifty or sixty cards to write by the time I got around to it, and (b) I can type faster than I can write by hand. Given those criteria, it's quite possible you don't need a programme like this. Then again, it might prove an interesting exercise to translate it into another form of Basic, and it could also form the basis of a log-keeping programme.

It is written in Microsoft Basic (the IBM PC version) and some commands will need to be rearranged before it will run on other machines under other versions of Basic, but it has been kept relatively simple and should pose no real problems.

The programme prompts for QSL data for a single contact, a line at a time. Lines 160-180 allow you to "pre-set" your rig, power and antenna details because they will usually be the same for a number of contacts, but the programme interactively (lines 190-250) allows you to alter them as you go.

Data is written to a sequential file called QSLDATA. You can break the programme after any complete QSO entry and return later to add more QSOs to the existing file, before printing.

Once you have printed the QSLs and wish to start a new file, you must DELETE or RENAME the QSLDATA file.

I have a tremendous stockpile of printed QSL cards, so I use this programme to print onto self-adhesive labels, which I stick over the data boxes on the cards. I have printed directly onto the cards, but you need to add the optional lines shown in Listing 2 in order to stop the process between cards. If you wish, it is quite simple to print your callsign in large letters by adding in the lines shown if Listing 3. You can easily print an entire QSL card by adding in details of your name and address with further LPRINT lines.

You are quite free to punch, copy, use, alter or give-away the programme, provided that you include the copyright notice at Line 30 and DO NOT SELL it to anybody. Not that you'd get much for it, but you never know . . .

AR

LISTING 1. MAIN PROGRAM

```
10 REM QSL.BAS
20 REM
30 REM * QSL GENERATION PROGRAM c 1984 M.G. EMM
40 REM * VARIABLES:
50 REM * SIGN$ = CALLSIGN     WORKED$ = DATE     Z$ = TIME (UTC)
60 REM * MHZ$ = FREQUENCY   MODE$ MODE     RST$ = REPORT
70 REM * RIG$ = RIG    PWR$ = WATTS   ANT$ = ANTENNA
80 REM * OP$ = NAME
90 CLS:WIDTH 80: KEY OFF
100 INPUT "Enter Callsign--                          ", SIGN$
110 INPUT "Enter Date Worked (e.g. 22-XII-83)-- ", WORKED$
120 INPUT "Enter Time U.T.C.--                       ", Z$
130 INPUT "Enter Frequency--                         ", MHZ$
140 INPUT "Enter Mode--                              ", MODE$
150 INPUT "Enter Report--                            ", RST$
160 LET RIG$ = "FT-102"
170 LET PWR$ = "100"
180 LET ANT$ = "4 El. Yagi @ 30'"
190 PRINT:PRINT "RIG: "; RIG$;" ";PWR$;" Watts  "; "Ant: "; ANT$:PRINT
200 PRINT "Press <ENTER> if OK; any other key to change...":PRINT
210 CHANGE$ = INKEY$: IF CHANGE$="" GOTO 210
220 IF CHANGE$=CHR$(13) GOTO 260
230 INPUT "Enter Rig--                               ", RIG$
240 INPUT "Enter Power--                             ", PWR$
250 INPUT "Enter Antenna--                           ", ANT$
260 INPUT "Operator's Name--                         ", OP$
270 PRINT:PRINT "Check the screen!"
280 PRINT:PRINT "Press <ENTER> if all OK or any other key to
    restart...":PRINT
290 CHANGE$ = INKEY$: IF CHANGE$="" GOTO 290
300 IF CHANGE$=CHR$(13) GOTO 320
310 GOTO 90
320 OPEN "QSLDATA" FOR APPEND AS #1
330 WRITE #1,SIGN$,WORKED$,Z$,MHZ$,MODE$,RST$,RIG$,PWR$,ANT$,OP$
340 CLOSE #1
350 CLS:PRINT "Any more?  Press enter to continue or any other key when"
360 PRINT "ready to print first card, or <BREAK> to escape..."
370 CHANGE$=INKEY$:IF CHANGE$="" GOTO 370
380 IF CHANGE$=CHR$(13) GOTO 90
390 CLS
400 OPEN "QSLDATA" FOR INPUT AS #1
410 INPUT #1,SIGN$,WORKED$,Z$,MHZ$,MODE$,RST$,RIG$,PWR$,ANT$,OP$
420 LPRINT "Confirming QSO with  "; SIGN$
430 LPRINT WORKED$;" ";Z$;"Z";" ";MHZ$;"MHz ";MODE$;" RST:";RST$
440 LPRINT RIG$;"  Pwr: ";PWR$;" W  Ant: ";ANT$
450 LPRINT "MANY TKS UR QSO ES QSL, ";OP$;"      --73"
460 LPRINT:LPRINT
470 IF EOF(1) THEN CLOSE:GOTO 490
480 GOTO 410
490 KEY ON:END
```

LISTING 2. OPTIONAL STEPPED PRINTING

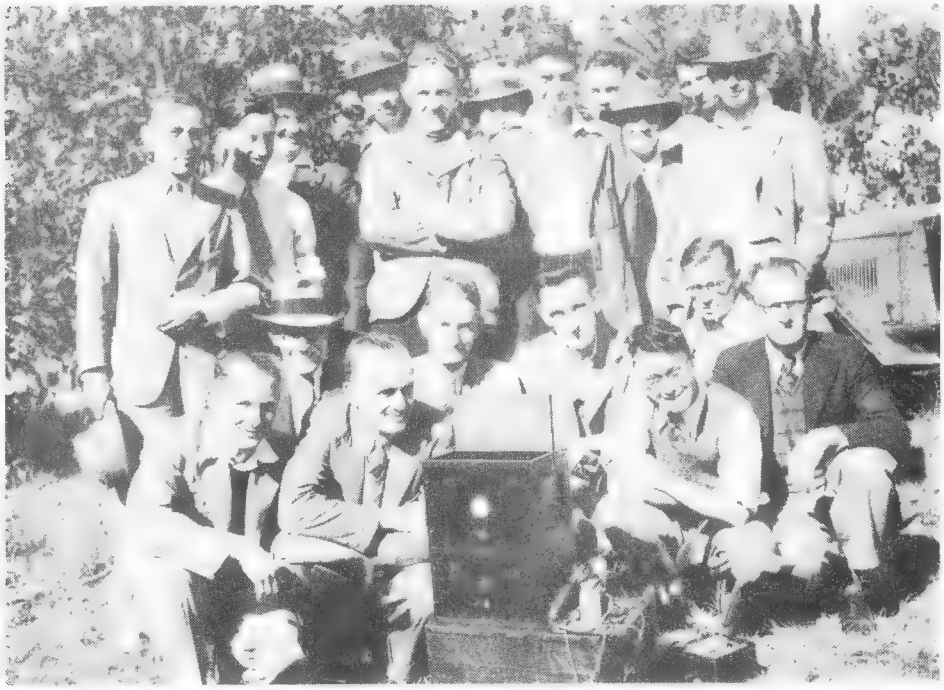
```
404 REM * HALT, WAIT FOR KEYBOARD INPUT FOR STEPPED PRINTING
405 CLS:LOCATE 5,5:PRINT "Press any key when ready to print card..."
406 GO$=INKEY$
408 IF GO$="" GOTO 406

490 GOTO 404:REM * NEW LINE 490 FOR STEPPED PRINTING
```

LISTING 3. OPTIONAL CALL SIGN PRINTING

```
411 LPRINT "    **     **  **   **  *******  *******  ***     ***
412 LPRINT "    **     **  **   **  **       **       ****    ***
413 LPRINT "     **   **   **  **   **       **       **  **  **
414 LPRINT "     **   **   ****    ******   ****     **   ** **
415 LPRINT "      ** **    **  **        **  **       **    *****
416 LPRINT "       ***     **   **       **  **       **     ***
417 LPRINT "        *      **   **  ******   **       **      **
418 LPRINT:LPRINT
```

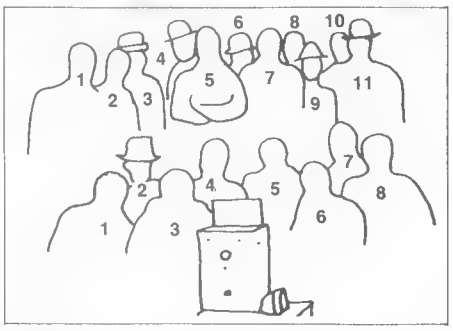
QUEENSLAND OLD TIMERS

Alan Shawsmith VK4SS
35 Whynot Street, West End, Qld, 4101



This pre-WW11 gathering of Queensland amateurs is one of the few informal group photos that is still in existence after a half-century. It shows some of the most active and famous VK4 DXers of the Halcyon Days of Radio and was taken during a WIA Field Day outing in 1934 at Everton Park, a western suburb of Brisbane. In those days it was virgin bushland but now is partly covered with housing estates.

Almost all were members of the WIA, at a time when the Institute was vigorous and expanding and the esprit de corps was at an all time high. Hopefully, it will revive much nostalgia for those VK4 00Ters who can remember the era. A big thanks goes to Bill Chitham VK4UU who dug the photo out of a pile of papers at the rear of his garage.



KEY TO PERSONALITIES:

1 Person with hat in hand and smoking — identity unknown. *Can any reader assist?*
2 Arthur Walz VK4AW. Deserves the title of Father of AR in VK4's Halcyon Days — not in an historical sense but because of his interest in and influence and informed knowledge of all WIA and other activities. RAAF Wing Commander WW11.
3 D Chadwick VK4GU (SK)
4 Identity unknown. Any information appreciated.
5 Roy Baxter VK4FJ. Keen DXer, countries worked 300+. Also professional Navy CW operator.
6 Dr Morgan Gabriel, no callsign (SK). Lower part of face is obscured.
7 Howard McGregor VK4ZU.
8 Jack Bates VK4UR. No hat and face partly obscured. Keen DXer, able CW operator and member of illustrious 'U' gang.
9 Ock Alder VK4JB (SK).
10 John Thorley VK4RT (SK). Professional mechanical engineer. Keen DXer and skilled homebrewer. Tragically killed in a car crash on the Darling Downs.
11 Herb Sprenger VK4ES. Rose from radio serviceman to rank of Inspector and Superintendant Communications Division Qld Police Force.

SEATED

1 Bill Chitham VK4UU. Smart CW operator and creator of the 'U' gang.
2 Person with glasses and hat on head. Identity unknown. Please help.
3 Pat Kelly (no call when photo was taken) (SK). A dedicated WIA stalwart, keen worker for the Institute and one of nature's gentlemen.
4 Bill Harsten VK4RY. Sitting proudly behind his homebrew portable rig. (SK). The word 'portable' then and now has an entirely different concept.
5 Jack Files VK4JF (SK). Keen CW operator, gave long service to the WIA in executive positions, viz QSL Officer etc. Another of nature's gentlemen, respected by all. His memory is perpetuated by the annual J Files Memorial Contest.
6 Bob Campbell VK4RC (SK). Keen and active in all AR activities. With Keith VK4KS instigated Disposals Sales of AR gear which is still going today, thirty seven years later. Sadly, he died prematurely.
7 Alf Guilford VK4AP (SK). Homebrewer and efficiency expert par excellence. Could get more watts out from a 245 or 210 than anyone.
8 Arthur Johnston VK4PX. Keen homebrewer until the mid-sixties. Distinctive service in 5th Div Sigs WW11.

And finally — WHO TOOK THE FOTO??

AR

THE WORLD CLASS UHF HAND HELD

Did you know that ICOM build this hand-held in a sealed case? With squelch sensitive below 0.1μV, and over 2.5 watts output, the processor controlled features of this portable become essential in searching for that elusive QSO. Priority scan in selectable increments and 10 memories are just a few features that fit comfortably into your hand. UHF opens a whole new experience for you, the IC-04A is built to help.

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THE EXPERIMENTAL AMATEUR

Lindsay Lawless VK3ANJ
Box 112, Lakes Entrance, Vic 3909

Measurements at Radio Frequencies:

One of the many fascinating aspects of amateur radio is the opportunities for interesting experiments and measurements using unsophisticated and inexpensive apparatus. The measurement of resistance, inductance, and capacity at or near operating frequency is a good example of the efficiency of simple apparatus.

To make measurements at radio frequency a radio frequency source, a resonance indicator and a calibrated variable capacitor (or several known fixed capacitors) is all that is required. A grid-dip oscillator (GDO) serves very well as a combined source and resonance indicator but there are other possibilities such as the station transmitter on dummy load and reduced power in conjunction with an absorption wave meter. If a GDO is used it will be necessary to check frequency with the station receiver. Never rely on the calibration of the GDO. The variable capacitor can be any reasonable quality item coupled to a calibrated dial drive. One of my solutions uses a "home brew" antenna tuning unit (circuit at Fig 1) and a GDO.

The capacitor of the ATU can be isolated from the rest of the ATU circuit and accessed from the output terminals. An initial problem with this was the calibration of the dial; I achieved this using the following "recipe" which illustrates the general approach to deducing L and C from the results of resonance measurements.

1 The tuning dial of the ATU is calibrated 0-100; set the dial to 100 and adjust the mechanical coupling to ensure that the capacitor is fully meshed at this setting. Check that zero dial setting coincides with minimum capacitance.

2 Parallel the ATU coil and both sections of the ganged capacitor using as far as possible the permanent wiring (this ensures that "strays" are included in the final calibration).

3 Measure the resonant frequency of the LC combination at several dial settings. (I used 100, 60, 30 and 10).

4 Reset the dial to one of these setting (I chose 10), connect a small known capacitor in parallel and measure the new resonant frequency.

5 Calculate the value of the ATU capacitor (Cx) at this dial setting;

$Cx = C1 / K-1 \ldots (1)$

where C1 is the capacitance of the added small capacitor.

$K = (f1/f2)^2$; f1 is the resonant frequency without the added capacitor and f2 is the resonant frequency with C1 connected.

6 Calculate the ATU coil inductance;

$L = 1/(2\pi f1)^2 Cx$

7 Calculate the capacitance at each of the dial settings of step 3.

$C = 1/(2\pi f)^2 L$

8 Draw a graph of C against dial setting and note that zero dial does not coincide with zero capacitance. The value at zero dial is the circuit residual capacitance.

I obtained the following results using the "recipe":

Step 3

Dial Setting	Frequency (MHz)
100	1.86
60	2.33
30	3.15
10	4.54

Step 4

Dial Setting	Added C	Frequency (MHz)
10	0	4.54 = f1
10	56 pF	2.97 = f2

ie C1 = 56 pF, and $K = (4.54/2.97)^2 = 2.34$

Step 5

$Cx = 56/(2.34 - 1) = 41.8pF$.

Step 6

$L = 29.4\ \mu H$.

Step 7

Dial setting	Capacity (pF)
100	249
60	159
30	87
10	41.8

Step 9

The graph at fig 1 reveals that the variable is a linear type (an advantage for measurements) with a capacitance range of 232pF. It was probably designed as a 120 + 120pF, 2 gang with a residual of 10pF. The residual in the ATU circuit is 18pF. (Total 28).

To measure inductance the capacitor is switched out of circuit, the unknown connected across the output terminals using short leads and the resonant frequency measured then $L = 1/(2\pi f)^2 C$

To measure capacitance the internal inductance is paralleled with the variable and the resonant frequency found at some dial setting, 100 is probably the best. The unknown capacitor is then connected to the ATU output terminals with short leads and reasonance restored by reducing the ATU capacitance. The reduction required is the capacitance of the unknown.

The method for measuring capacitance offers a check on the calibration. I used three check points 56pF, 112pF and 168 pF (these are marked X on fig 1). Clearly the resolution of the ATU dial is 56pF per 24 divisions or 2.3pF per division.

For measurements in the HF band the ATU capacitor is adequate but for measurements up to 150 MHz I use several smaller variables coupled as needed to a vernier dial drive. These smaller capacitors can also be used in parallel with the ATU capacitor to provide "bandspread" and improve the resolution.

Calibration of the ATU capacitor and taps on the inductance make it possible to get good estimates of antenna impedance from the final matching values.

To apply the measurement method successfully it is necessary to manipulate the basic circuit equations. For example, equation (1) was derived as follows:

$(f1)^2 = 1/(2\pi)^2 Cx$

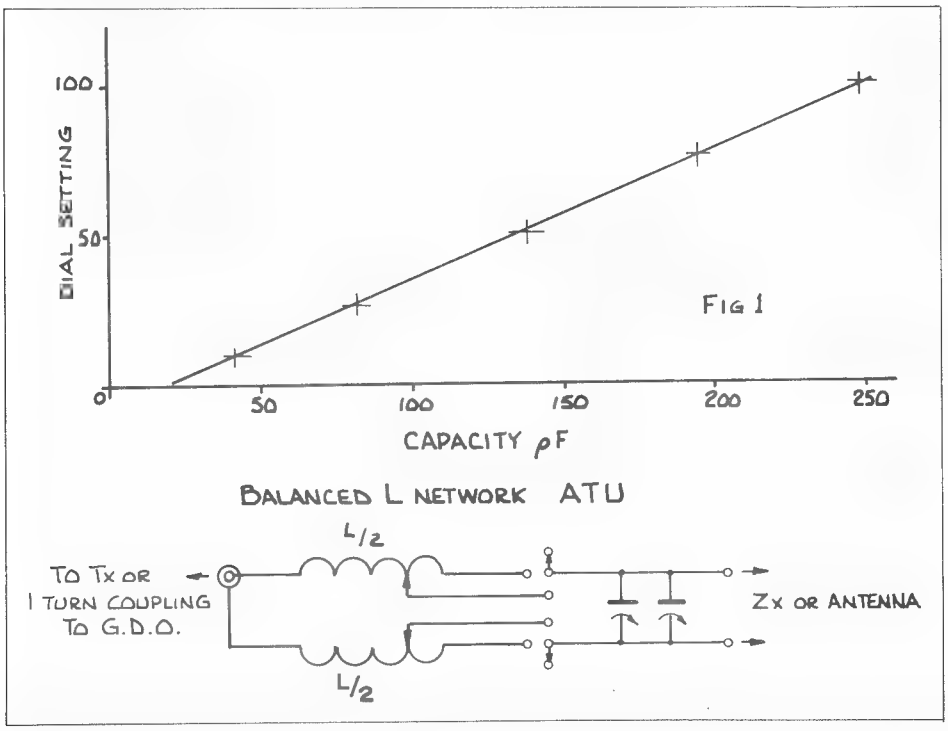
$(f2)^2 = 1/(2\pi)^2 (Cx + C1)$

$(f1)^2/(f2)^2 = (Cx + C1)/Cx = K \ldots$ etc.

With the means to measure L and C at RF the other possibilities are "mind boggling", for example the impedance of antennas, dielectric constant of materials, self resonant frequencies of coils, electrical length of transmission lines and many more. Have you ever considered using a calibrated variable capacitor as a variable negative inductance?

The resonance method of deducing circuit parameters is similar to the mariners' "ded(uced) reckoning" and the best and least expensive and most portable device for this purpose is located between our ears.

AR



TRY THIS

Merv Smith, VK2ZD
1 Bridge Street, Lane Cove, NSW 2066

Attaching small nuts to those hard to reach positions can be made easy using the following method.

While long-nose pliers or tweezers will hold a nut in most positions while the screw is attached, there is occasional need for the "bent finger" to hold the nut in place.

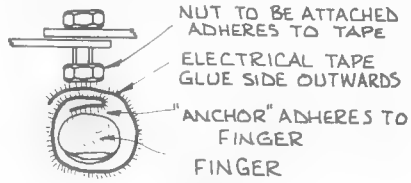


Figure 1

With the help of two inches (50 mm) of electrical PVC tape wrapped around the tip of the finger as shown in figure 1, the (almost) impossible can be achieved.

Bend back ¼" (6 mm) of the tape and press onto the finger as an anchor. Wrap the remainder of the tape around the finger, sticky side out.

Nuts or whatever, may now be attached to the adhesive, and held in position while the screw is turned.

I have used a number of methods to attach nuts in awkward positions, even including temporarily soldering a thin wire to the flat side of the nut, but this method beats them all if the position can be reached with a finger.

AR

THUMBNAIL SKETCHES

Alan Shawsmith, VK4SS
35 Whynot Street, West End, Qld 4101

EDDIE H WHITE — Ex-VK4EW

Eddie has been licensed since March 1934 — and is still going strong. His half-century in wireless has been varied indeed. He has operated in three states; as VK4EW until 1956, then VK5OW in South Australia, next as VK8OW from Darwin and finally VK4OW when he returned to Sunny Queensland in 1963.

Handling Cyclone Agnes Emergency Traffic in March 1956 are Eddie VK4EW (standing) with Clive VK4CC.

In 1956 Eddie did more than his bit to raise the hobby to its present status of 'the amateur service'. Cyclone Agnes crossed the North Queensland coast leaving behind it a swath of destruction and countless anxious relatives in Brisbane wondering if and how those in the north had survived. Working with Clive

Eddie as VK80W in 1963. Gear is a KWM1 transceiver and a TA33-J beam.

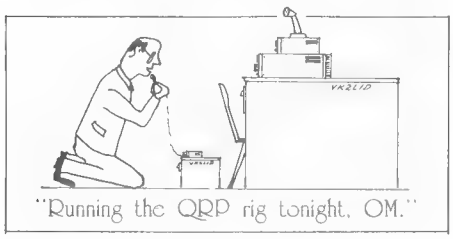
Cook VK4CC and PMG permission they handled over 600 in/out urgent telegrams on A1 mode in four days. Their northern link was Norm Casey VK4NT in Mareeba. For this VK4EW received a personal letter of commendation from the then Director of Posts and Telegraphs, Mr C. Faragher.

Eddie has been a long time member of the WIA. He also belongs to the Brisbane VHF, ATV and Gold Coast Clubs — all of which means he's a very keen and committed OOTer, being very QRL on several modes.

Most of Eddie's professional life was spent with DCA — Department of Civil Aviation — during which time he was posted to various towns and places in the aforementioned states.

In WW11 VK4EW did his bit in Army Signals. He now lives alone in Brisbane, close to the City in the suburb of Red Hill. Give him a shout if you hear him on any mode.

AR



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FL63	9 MHz CW/RTTY narrow filter — 250 Hz	65 50
FL33	9 MHz AM filter — 6 kHz	53 00
FL70	9 MHz SSB wide filter — 2 8 kHz	52 50
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FL53A	455 kHz CW/RTTY narrow filter — 250 Hz	110.00
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PS35	Internal switched mode power supply	258.00
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SM8	Deluxe desk microphone	99 00
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EX241	Marker unit	22 00
EX242	FM unit Tx & Rx	45 00
EX243	Curtis keyer unit	59 00
FL45	9 MHz CW filter — 500 Hz	65 50
FL44A	455 kHz SSB narrow filter — 250 Hz	99 50
FL52A	455 kHz CW/RTTY filter — 500 Hz	110 00
FL53A	455 kHz CW/RTTY narrow filter — 250 Hz	110.00
FL54	9 MHz CW/RTTY narrow filter — 270 Hz	65.50
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EX202	LDA unit for use with AT100/AT500	19 00
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EX205	Transverter unit	19 00
EX195	Marker unit	33 00
FL30	SSB pass band tune filter	56 00
FL44	455 kHz SSB filter — 2 4 kHz	99 50
FL45	9 MHz CW filter	65 50
IC-720A	No longer available Accs still available	
PS15	External power supply 20 amps	215 00
CF1	Cooling fan for PS15	40 50
EX144	Mounting bracket for CF1	7.50
SM5	Desk microphone	57 00
FL32	CW narrow filter	56 50
FL34	AM Xtal filter	53 00
IC-R70	General coverage receiver 2-30 MHz	
EX257	FM unit	51.00
FL63	CW narrow filter	65 50
FL44A	455 kHz SSB filter	99 50
CK70	DC cable kit	15 00
70720	Interface unit to transceiver with IC-720A	99 00
IC-R71A	All mode general coverage Rx keypad entry	
RC-11	Infra-red remote control unit	99 00
EX257	FM unit	51.00
CK70	DC cable kit	15 00
IC-2KL		1749 00
IC-AT100	100 watt automatic antenna tuner	499 00
IC-AT500	500 watt automatic antenna tuner	620 00
IC-PS30	System power supply 25 amp continuous	375 00
IC-AH1	Mobile antenna 3 5 MHz-30 MHz	299 00
IC-CT10	Computer interface for 751, 745, 271 R71A	499 00
VHF EQUIPMENT		
IC-271A	Multi-mode base station 25W, 32 memories	
IC-271H	High power version of above 100W	
PS25	Internal switched mode power supply 271A	189 00
PS35	Internal switched mode power supply 271H	258 00
EX310	Speech synthesized unit	68 00
AG20	Internal receive pre-amp 271A	95 00
AG25	Masthead receive pre-amp 271H	112 00
SM6	Desk microphone	57 00
IC-290H	25W multi-mode mobile, 5 memories	
IC-27A	25W FM mobile, 9 memories multi-function	
IC-27H	45W FM mobile, 9 memories multi-function	
UT16	Voice synthesizer unit	45 00
BU-1	Memory back-up unit for mobiles	39 50
IC-2A	Synthesized 2m FM hand held 1 5W	
IC-02A	Synthesized 2m FM hand held	
CA5	5/8 Telescopic gain antenna	24 00
ML1	10 watt booster unit for 2A	95 00
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HS-10/SB	Head set with boom mic (NTT/2A, 02A)	75 00
SS1	Shoulder strap	15.00
BC-38E	Desk top drop-in charger (all batt packs)	99.00
HM-9	Speaker microphone	
UHF EQUIPMENT		
IC-471A	Multi-mode base station, 25 watts, 32 memories	
IC-471H	High power version of above, 75 watts	
PS25	Internal power supply for IC-471A	189.00
EX310	Voice synthesizer unit	68 00
SM6	Desk microphone	57 00
IC-490-A	Multi-mode mobile 10W, 5 memories	
IC-47A	FM mobile 25 watts, 9 memories	
IC-45A	FM mobile 10 watts, 5 memories	
BU-1	Memory back-up unit for mobiles	39 50
AG1	Masthead pre-amp for 471A/451/490	95 00
AG35	Masthead pre-amp for 471H	128 00
IC-4E	Synthesized hand held 1 5W	
IC-04A	Synthesized hand held K'pad entry LCD	
1.2 GHz EQUIPMENT		
IC-120	FM transceiver, 1 watt output	699 00
CA1200	Mobile antenna, gutter mounted cable	126 00
ML12	10 watts booster with pre-amp	450 00
PS45	External power supply 8 amp	199.00

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IC 009

AMATEUR LOG COMPUTER PROGRAMME

Neil Cornish, VK2KCN
56 Sherwin Avenue, Castle Hill, NSW 2154

For many of us, the computer came along well after we had filled a few log books, so that computer log programmes which store lots of information about a QSO presented great problems when one came to enter the thousands of previous QSOs into the computer file. For the active amateur, these programmes soon became rather slow as the computer waded through masses of information looking for the callsign and evidence of a previous QSO.

This programme solves both problems and is designed to run on the popular Commodore 64 with a DISC DRIVE but will, with modification, work on other BASIC computers. The main features of the programme are:

- its fast retrieval of key information of the last QSO with a station
- the relative ease of inputting large numbers of prior QSOs.

The programme sorts QSOs into files by prefix, (eg VK1; VK2; JA1; JL1 etc) and in those files stores the suffix together with the written log-book page number for the last QSO. When existing logs have been entered on disc, the operation of the programme is as follows:

1 The CALLSIGN is entered from the keyboard.
2 The computer works out the prefix of the callsign.
3 The file with the prefix as file name is loaded.
4 Suffix of the prefix is compared with those on file.
5 If found, the written log page number is displayed.
6 Option then to update for a new QSO is given.
7 If suffix not found, option to add suffix to file.
8 After 6 or 7 file is updated if required.
9 Programme returns to CALLSIGN input for next QSO.

Because Commodore diskettes only hold 144 files it is necessary to use two diskettes. Whilst VK has only ten prefixes, JA has over sixty and the USA seems to have an infinite number!! The main diskette which has the programme on it, is known in the programme as diskette 0. Prefixes filed on diskette 0 are all of VK; Japan; USA; Canada; Great Britain; USSR and New Zealand. When a callsign from any other country is entered the programme asks you to change diskettes. Such callsigns are on the other diskette, known within the programme as diskette 1.

On diskette 1 the filing system is different. Regardless of the prefix, callsigns are stored in twenty six files (named A to Z), by the fourth letter of the callsign. For example, if the callsign 5W1GS were entered the programme would ask for a diskette change and when the diskette number "1" was entered, a file named "G" would be loaded and searched for the full callsign, 5W1GS. From then on the operation is the same as with diskette 0. If a JA callsign is then entered, the programme will pause and ask for a diskette change to diskette "0".

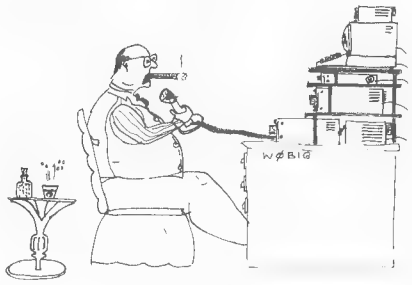
In my log I have over 3000 callsigns and the retrieval is so quick, (even with a slow 1541 drive), that by the time I've acknowledged the callsigns; said Good Morning OM and thanked him for coming back to the call, I can usually add either ". . . nice to see you again, Hiroshi-san, . . ." or else, ". . . nice to meet you for the first time OM . . "

If you want it and can't take the typing, $5 for a tape or $10 for a disk will get it for you Priority Paid, but please, NO IRCs or stamps!!

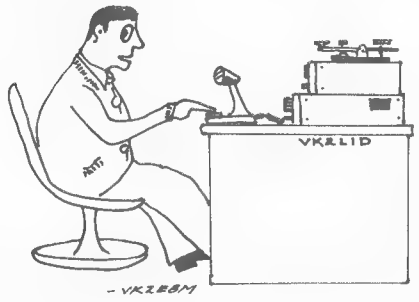
AR

```
100 REM: LOG                                    27/05/84  V0.1          NEIL CORNISH      :
110 PRINT"■":POKE53280,3:POKE53281,3:DIMA$(255),B(255):OPEN15,8,15,"I0":J=1
120 GOSUB1200:CR$=CHR$(13):INPUT"■DATE GMT DDMMYY   ■■■■";DT$:IFDT$="■"THENEND
130 DT$=CHR$(166)+DT$
140 LF$=FI$:GOSUB1250:INPUT"■CALL SIGN   ■■■■";CA$:IFCA$="■"THENEND
150 L1$=LEFT$(CA$,1):L2$=LEFT$(CA$,2)
160 IFDI>0THENFI$=MID$(CA$,4,1):SU$=CA$:GOSUB1060:GOTO180
170 GOSUB290:IFLF$=FI$THENSU$=RIGHT$(CA$,(LC-PL)):GOSUB660:GOTO190
180 GOSUB480

190 REM: MAIN WORKSPACE :
200 PRINT"■FOR "CA$" SELECT:- ■":GOSUB1250
210 FORK=1TO4:READD$(K):NEXTK
220 PRINT"■.. "D$(J):PRINT" 4 .. "D$(4):RESTORE
230 DATAADD TO LOG,ADD TO LOG,UPDATE LOG,NO ACTION
240 GETSPLIT$:IFSPLIT$=""THEN240
250 SP=VAL(SP$):IFSP<1ORSP>4THENSP=4
260 IFSP<>JANDSP<>4THEN240
270 ONSPGOTO740,790,950,140
280 END

290 REM: FIND PREFIX & CALL A FILE :
300 L3=ASC(MID$(CA$,2,1))

310 REM: LENGTH OF PREFIX & CALLSIGN :
320 PL=4:LC=LEN(CA$)
330 PL=PL-1
340 IF ASC(MID$(CA$,PL,1))<48ORASC(MID$(CA$,PL,1))>57THEN330
350 FILE$=LEFT$(CA$,PL):SU$=RIGHT$(CA$,(LC-PL)):IFDI>0THENFI$=LEFT$(CA$,PL-1)
360 IFDI>0THENGOSUB1060:RETURN
370 IFL2$="VK"ORL2$="ZL"THENRETURN
380 IFL2$="VE"ORL2$="VO"THENFI$="VE":RETURN
390 IFL1$="A"ANDL3>64ANDL3<77THENFI$="W"+MID$(CA$,PL,1):RETURN
400 IFL1$="J"ANDL3>64ANDL3<84THENRETURN
410 IFL1$="W"ORL1$="K"ORL1$="N"THEN FI$="W"+MID$(CA$,PL,1):RETURN
420 IFL1$="G"ANDL3<65THEN FI$="G"+MID$(CA$,PL,1):RETURN
430 IFL1$="U"ORL1$="R"THENFI$="UA"+MID$(CA$,PL,1):RETURN
440 PRINT"■"FI$" CALLS ARE NOT ON THIS DISK.":PRINT"CHANGE & ENTER DISK NUMBER'
450 GOSUB1250:GETDISK$:IFDISK$=""THEN450
460 PRINT#15,"I0":DI=VAL(DI$):IFDI=0THENRETURN
470 FI$=MID$(CA$,4,1):SU$=CA$:GOSUB1060:RETURN

480 REM: READ FILE FROM PREFIX :
490 PRINT"■■ READING "FI$" FILE."
500 OPEN2,8,2,"0:"+FI$+"*,S,R":GOSUB1200
510 IFEN=62THENPRINT"■■NO "FI$" CALLS IN LOG":CLOSE2:J=1:RETURN
520 I=1:J=1
530 PRINT
540 INPUT#2,A$(I),B(I)
550 RS=ST:GOTO610
560 IFRS=64THENCLOSE2:GOTO640
570 IFRS<>0THEN590
580 I=I+1:GOTO540
590 PRINT"■BAD■DISK■STATUS■IS■"RS
600 END

610 REM: COMPARE SUFFIX :
620 IFSU$=A$(I)THEN670
630 GOTO560
640 PRINT"■■"FI$" FILE READ     "
650 IFJ=3THENCLOSE2:RETURN
660 PRINT"■■"CA$" NOT WORKED BEFORE.":J=2:CLOSE2:RETURN
670 PRINT"■■PREVIOUS CONTACT "CA$" LOG PAGE"B(I):J=3:R=I:GOTO560

680 REM: COMPARE SUFFIX, FILE UP :
690 FORSE=1TOI:IFSU$=A$(SE)THEN 720
700 NEXTSE
710 PRINT"■"CA$" NOT WORKED BEFORE.":J=2:RETURN
720 PRINT"■■PREVIOUS CONTACT "CA$" LOG PAGE"B(SE):J=3:R=I:RETURN
730 END
```

```
740 REM: CREATE NEW FILE :
750 A$(1)=SU$:I=1
760 INPUT"LOG PAGE ";B(1)
770 GOTO870
780 END

790 REM: ADD TO EXISTING FILE :
800 PRINT"■■■ ADDING SUFFIX "SU$" TO "FI$" FILE. ■"
810 I=I+1
820 A$(I)=SU$
830 PRINT"■ENTER LOG PAGE NUMBER FOR THIS QSO "
840 PRINT"■WITH ";CA$;
850 INPUTB(I)
860 PRINT"SCRATCHED "FI$;:PRINT#15,"S0:"+FI$+"*":GOSUB1200
870 PRINT"SAVED "FI$+DT$
880 OPEN2,8,2,"@0:"+FI$+DT$+",S,W"
890 GOSUB1200
900 FORZ=1TOI
910 PRINT#2,A$(Z)","STR$(B(Z))CR$;
920 GOSUB1200
930 NEXTZ:CLOSE2:GOTO140
940 END

950 REM: ALTER EXISTING FILE :
960 PRINT"■■■TO ALTER THE LOG PAGE OF THE LAST "
970 PRINT"■QSO WITH "CA$", ENTER NEW PAGE NUMBER■"
980 INPUTB(R)
990 GOTO860
1000 INPUT#2,A$(I),B(I)
1010 RS=ST
1020 IFRS=64THENCLOSE2:GOTO860
1030 IFRS<>0THEN590
1040 GOTO990
1050 END

1060 REM: SECONDARY DISK :
1070 L3=ASC(MID$(CA$,2,1))
1080 IFL1$="J"ANDL3>64ANDL3<84THEN1160
1090 IFL2$="VK"ORL2$="ZL"THEN1160
1100 IFL2$="VE"ORL2$="VO"THENFI$="VE":GOTO1160
1110 IFL1$="A"ANDL3>64ANDL3<77THENFI$="W"+MID$(CA$,PL,1):GOTO1160
1120 IFL1$="W"ORL1$="K"ORL1$="N"THEN FI$="W"+MID$(CA$,PL,1):GOTO1160
1130 IFL1$="G"ANDL3<65THEN FI$="G"+MID$(CA$,PL,1):GOTO1160
1140 IFL1$="U"ORL1$="R"THENFI$="UA"+MID$(CA$,PL,1):GOTO1160
1150 RETURN
1160 PRINT"■"CA$"  NOT ON THIS DISK.":PRINT"CHANGE & ENTER DISK NUMBER"
1170 GOSUB1250:GETDISK$:IFDISK$=""THEN1170
1180 PRINT#15,"I0":DI=VAL(DI$):IFDI=0THENGOSUB290
1190 RETURN

1200 REM: READ ERROR CHANNEL :
1210 INPUT#15,EN,EM$,ET,ES
1220 IFEN>0THENPRINTEN,EM$,ET,ES:GOSUB1250
1230 RETURN
1240 END

1250 REM: BELL :
1260 POKE 54296,15:POKE 54295,0:VV=54272
1270 POKE VV+6,0:POKEVV+5,12:POKEVV+1,200
1280 POKEVV+3,40:POKEVV+4,0:POKEVV+4,65
1290 FORMM=1TO100:NEXTMM:POKEVV+4,0:RETURN

READY.
```



"Don't tell me to QSY, friend. I have $10,000 worth of equipment here!!"



"No OM — the XYL's not interested in amateur radio — except every once-in-a-while she asks how much it is all costing!!"

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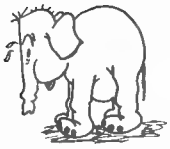

HOW'S YOUR MEMORY?

Ivan Huser VK5QV
7 Bond Street, Mount Gambier, SA 5290

Over the past few years, the increase in computerised equipment available to the radio amateur has produced the need for reliable memory back-up systems. How's your memory??

THE PROBLEM

Manufacturers of equipment containing volatile memories often make provision for the use of dry cells as a back-up, with the recommendation that the cells be replaced every six to twelve months.

Lithium cells have a much greater shelf life than the normal carbon-zinc cells and hence need less frequent replacement where the equipment is used continuously and back-up is required only in the event of power failure. The problem in either case is to remember to replace the cells before they reach the end of their useful life.

Rechargeable nickel-cadmium cells may also be used provided that some arrangement is made for charging the cells while the equipment is powered up. However, despite the many articles making statements to the contrary, I still believe that nickel-cadmium cells do in fact exhibit a discharge memory which makes them less useful in this application.

The use of cells for memory back-up suffers from two other distinct disadvantages.

Firstly, unless the cells are soldered into circuit, contact resistance can cause eratic operation. This is particularly so with nickel-cadmium cells. Secondly, it would appear that the sudden drop in rail voltage when the equipment is switched off can, in some cases, cause problems with the content of memories.

THE ANSWER?

The recently released SUPERCAP[1] by NEC may overcome these problems in many amateur applications.

The NEC supercap is a one Farad (that's correct — one million microfarad) capacitor and is rated at 5.5 volts maximum working, making it ideal for use with a nominal 5 volt bus.

The manufacturer claims a maximum of 30 days back-up for CMOS read/write (RAM) memories. Higher voltage ratings or greater capacitance (ie longer back-up time) may be obtained by connecting the capacitors in series or parallel respectively.

The capacitors are relatively small (44.5mm diameter x 18.5mm high) and will fit inside all but the most compact equipment. They are non-polarised and may be charged from a 5 volt supply rail via a low value resistor. The value of series resistance being determined by the maximum current capability of the primary power supply.

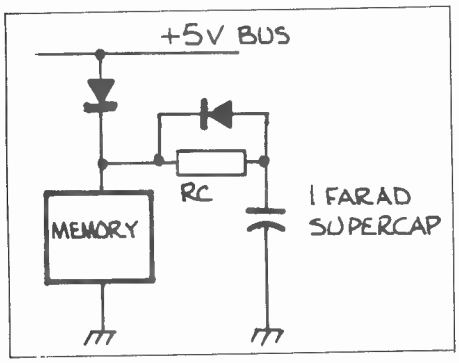

Figure 1 — Basic Circuit for Supercap Memory Back-up.

Note that the supercap is not recommended for ripple filter applications.[2]

CIRCUIT MODIFICATION

The basic circuit application is shown in Figure 1. The conversion of an existing system generally only requires the substitution of the capacitor for the batteries and the addition of a charging resistor, the diodes being already provided in the original circuit.

Figure 2(a) shows the modification for a Tono Theta 7000 communication computer and Figure 2(b) the modification for a Yaesu FV101DM digital VFO.

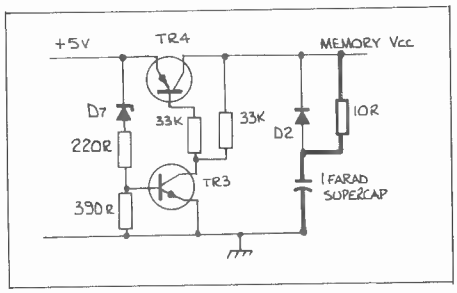

Figure 2(a) — Circuit for Memory Back-up for a Tono Theta 7000 Communications Computer.

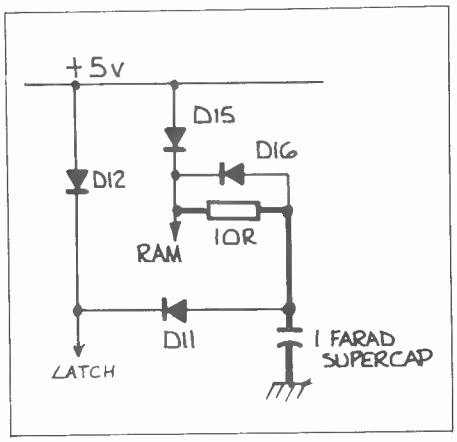

Figure 2(b) — Circuit for Memory Back-up for a Yaesu FV-101 M Digital VFO.

PHYSICAL MODIFICATION

Remove the dry cells from the equipment and disconnect the battery holder. In some cases the removal of the battery holder from the equipment may provide sufficient room for mounting the capacitor. If not, the capacitor may have to be attached to some convenient point on the chassis or case. Double sided adhesive tape may be used for this.

Connect the capacitor to the point from where the battery holder was disconnected. The length of lead does not appear in any way critical and the capacitor is non-polarised so no problems should be encountered.

Identify the appropriate diode and solder the charging resistor across it. I used a 10 ohm ¼ watt resistor in each case. This gives an initial charge time for the capacitor of approximately one minute. In practice, with some remaining charge in the capacitor, the 'top-up' time for the capacitor will be only a few seconds. This means that if the equipment is periodically energised for a short time, the content of the memory will be maintained.

FINALE

I am still in the process of evaluating these capacitors, but results to date appear to indicate that the claims made of them by the manufacturer are fully justified.

The capacitor in the Tono Theta 7000 has maintained the memory perfectly for 21 days and I can see no reason why 28 days or more cannot be achieved.

The capacitor in the FV101DM VFO has only been checked after 12 days. I do not expect a long back-up time in this case since the initial back-up current is comparatively high.

If you find that the back-up time is insufficient, then (just maybe) you do not use the equipment often enough. In which case, perhaps the memory facility is not required anyway.

NOTES

1 Available from Soanar Electronics Pty Ltd
2 Soanar Newsletter 'Supercap — The one million microfarad capacitor from Soanar'

AR

The way some people catch a fish is by the tale.

* * *

Fireproof: Being related to the boss.

* * *

Dieting: The penalty for exceeding the feed limit.

* * *

Did you hear about the plant in the math teacher's room? It grew square roots.

* * *

A space explorer is a fellow driving around town looking for a place to park.

* * *

Some minds are like concrete. All mixed up and permanently set.

* * *

Thirty days hath September, April, June and my neighbour for speeding.

* * *

Our new rig came through the mail marked "FRAGILE — please throw it underhand".

* * *

My YF avoids getting up with a grouch — she rises before I do.

* * *

Give us enough rope and we'll hang up a dipole.

* * *

A commercial traveller is someone who goes to the refrigerator during the sponsor's message.

* * *

Amateur: "How dare you swear before my wife?"
Partner: "Whoops, sorry! I didn't know she wanted to swear first."

from Collector & Emitter — March 1984

EXPANDING THE VIRTUES OF WICEN

Mark Stephenson VK3PI
46 Fore Street, Whittlesea, Vic, 3757.

(OR HOW TO GET EGG ON YOUR FACE!!!)

Many WICEN operators have a favourite humorous anecdote to tell others when the task of providing communications is complete, and the socializing begins. The following incident occurred during the Ski 80 marathon at Echuca earlier this year, and is re-told by popular demand.

The Victorian Ski-Trials Club was formed in the early 1970s to encourage and promote the sport of water ski racing. As part of their activities each year, the Ski 80 is conducted. This is an 80 km ski race from Torrumbarry Wier to Echuca along the Murray River, and as one can imagine, the prospect of hanging on to the end of a ski rope (with a boat attached) travelling at speeds in excess of 100 kph is not everyones cup of tea.

WICEN operators provide an invaluable safety communications link between race officials at the start and finish, as well as at intermediate points along the course. The value of this contribution has been demonstrated on numerous occasions, when skiers have injured themselves and prompt medical attention has been warranted. During the event operators are totally engrossed in message handling and have little time to enjoy the spectacle of the race. It is only when every competitor has been accounted for at the finish that the WICEN operator can relax and ponder the days events.

It was at this very point in time, as I relaxed in my car at the finish, that I spotted two lovelies walking down a track beside me. As a wine connoisseur savours the taste of a fine drop I savour the sight of natural beauty, and before I had time to consider my actions, I had asked the fair maidens to pose in front of my PI-mobile. The result can be seen (exhibit A, your honour).

Ah yes, not only was I going home with sunburn, a parched throat and a myriad of cables and connectors, but snug on the unexposed roll of film in my camera was my very first pin-up shot! Satisfied, I again busied myself with the task of packing up. Out of the corner of my eye I saw what I thought were those very same young ladies coming back up the track towards me! My inhibitions now totally unleashed I galloped towards them muttering something like *". . . the first photo might not develop, what say I take a second!??"*.

To my shock, horror (and delight) these ladies were not the first, and as the pallor of my skin became evident, I hastily thought of excuses for my outburst. After much explanation the two girls accepted my apologies, and then agreed to have their photo taken with me included in the shot. Of course at this stage I thought nothing of the girls and merely anticipated having a memory to look back on in years to come. (exhibit B, your honour).

And now to the end of the story . . . yes, you guessed it! It eventually was revealed that all four girls were friends, and I felt it appropriate to take a group photograph (again for posterity!). On reflection it was an amazing coincidence to approach two different pairs of girls, take their photographs separately, and learn they were friends. (exhibit C, your honour).

It would be inappropriate to end this short story without some sort of morale (moral) comment, so here goes:

"To not ask is negative in itself, as with the right approach anything is possible" **OR** *"Beware thy XYL or similar who offers to kindly pick up newly developed photographs, as ensuing explanations pertaining to subject matter on film can be long and tedious!"*

AR

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AMATEURS CAN WIN THEIR CLUB A UHF REPEATER . . . AND WIN THEMSELVES A COMPLETE AMATEUR STATION

In a new competition announced by Dick Smith Electronics, (in honour of the WIA's 75th Anniversary) factory authorised importers and suppliers of Yaesu amateur radio equipment in Australia, the major prize-winner won't even be an entrant!

The major prize winner will be a club, group or association nominated by the entrant — and that group will receive a magnificent new Yaesu 70 cm amateur repeater — complete and ready to 'plug in' to a power point and suitable antenna.

This much-sought-after prize, valued at almost $5000, has been donated by Yaesu Musen, Japan, to help promote amateur radio activity in Australia and the 430MHz band in particular.

"Interest in the 432MHz band has been rapidly growing over the past couple of years," said Ross Tester VK2KRT, Amateur Radio Products Manager for Dick Smith Electronics. *"This is due to a number of factors, not the least being that the idiots who are doing their best to ruin two metres tend to leave 70cm alone.*

"As most amateurs would know, last year we released a kit transceiver for 70cm and this is now in its fifth production run. Demand has far exceeded our expectations, with the result that many parts have been in short supply. However, we now have plenty of stock and the demand is still strong," he added.

"Sales of our Yaesu 70cm gear have also been strong. Highest demand is for the hand helds, such as the FT-708, and Yaesu have announced two new hand-held 70cm models and a new mobile model, to be available in Australia shortly.

"In addition, sales of the top-of-the-line FT-276 all-mode VHF/UHF set are more than justifying its inclusion in our range.

"We believe that use of 70cm should be encouraged. This is not just from a commercial point of view, but also a view held by many of our staff who are amateur operators. For this reason, we approached Yaesu Musen for assistance with the competition and they agreed without hesitation."

Obviously, Dick Smith Electronics has a vested interest in the promotion of amateur radio in Australia. However, this is in the interests of Australian amateurs as it is actively promoting fair competition in amateur equipment.

Many amateurs will have seen the advertisement on the inside front cover of the latest WIA callbook. This is just part of the efforts the company is making in pointing out the dangers of dealing with unauthorised importers and re-sellers.

"Many of the advertisements seen in the popular electronics magazines offer amazingly low prices, special offers, and so on," Ross Tester explained. *Often when one rings the companies concerned the goods 'are due in shortly' or 'have just been sold'. What makes things worse is that country readers, ordering by mail order, often have to wait weeks or months to get their goods.*

"One of the main reasons for promoting this competition is to make people aware of the benefits of dealing with the authorised importers. To this end, we recently announced we would match any legitimate price advertised in Australia for genuine Yaesu products. We're going to make sure that there can be no commercial advantage in shopping elsewhere — and with this competition, there is now a considerable disadvantage!"

THE COMPETITION ITSELF

Entry to the competition is open to anyone — to qualify, all they have to do is purchase any item of Yaesu equipment from any Dick Smith Electronics store. Then they have to explain (in the space provided on the entry form) why their club/group/association etc should be awarded the prize.

The best answer will win the prize for the body nominated. It's as simple as that. Obviously, originality and neatness will play a part.

Judges will be representatives from Dick Smith Electronics and the Wireless Institute of Australia.

Initial judging will be done by DSE, with finalists judged by the WIA. All reference to location or entrant will be removed from the finalists entries to give all areas an equal chance.

While there is no restriction on the group to whom the prize is awarded, it is expected that the group will be, or is prepared to become, affiliated with the Wireless Institute of Australia to facilitate the issue of a repeater licence by the Department of Communications.

It is quite possible that the entrant may wish to nominate the Federal (or a state) division of the WIA itself to best locate the repeater in accordance with its own plans.

However, the local club who wants to go UHF but hasn't had the necessary funds or expertise won't be disadvantaged in any way.

AND WHAT'S IN IT FOR THE ENTRANT?

It would be a shame for the winning entrant not to see any rewards for his or her efforts.

He or she will be rewarded with a complete Yaesu amateur station — either HF (based on the Yaesu FT757GX) or VHF/UHF (based on the Yaesu FT726R). The individual prize is donated by Dick Smith Electronics.

The entrant has the choice of the following:

HF STATION

- *Yaesu FT-757GX all-band, all-mode transceiver: THE radio!*
- *Yaesu FP-757HD 100% duty cycle mains power supply*
- *Yaesu FC-757 microprocessor controlled automatic antenna tuner*
- *Yaesu accessories: FIF232C RS232C computer interface, FRB-757 relay switching box and FAS-1-4R antenna selector*
- *V5JR vertical antenna*
- *100 metres RG-8U high grade coax cable*

Total Value $2410.45

OR

VHF/UHF STATION

- *Yaesu FT-726R all mode, multi band VHF/UHF transceiver*
- *Yaesu 2m, 6m and 70cm modules to suit*
- *Yaesu Satellite Module to suit — giving full cross-banding facilities*
- *DC power cable to suit (240V supply inbuilt)*
- *100m UHF grade RG-213 coax*

Total Value $2384.50

The competition is open to all — however, we expect that the vast majority of entries will come from licenced amateurs: after all, it is this group the competition is designed for.

The contest officially starts 1st December, and entry forms will not be given out after 28th February. All entries must be received by Dick Smith Electronics (either lodged at the local store or posted direct) by 10th March, 1985.

Judging will take place (and the winners announced!) towards the end of March.

It is hoped that amateur radio clubs and groups throughout Australia will make non-WIA members aware of this competition. After all, it is in the club's own interest: they could be the owner of a superb new Yaesu repeater.

Good luck!

AR

A RTTY/VOICE CONTROL UNIT FOR TWO TRANSCEIVERS

Andy Roudie VK3UJ
6 Barton Court, Vermont, Vic. 3133

The need for a switching unit was soon realised after much plugging in and out of MIC/RTTY leads to both transceivers.

The circuit and construction of such a unit is simple and does not require much effort or time.

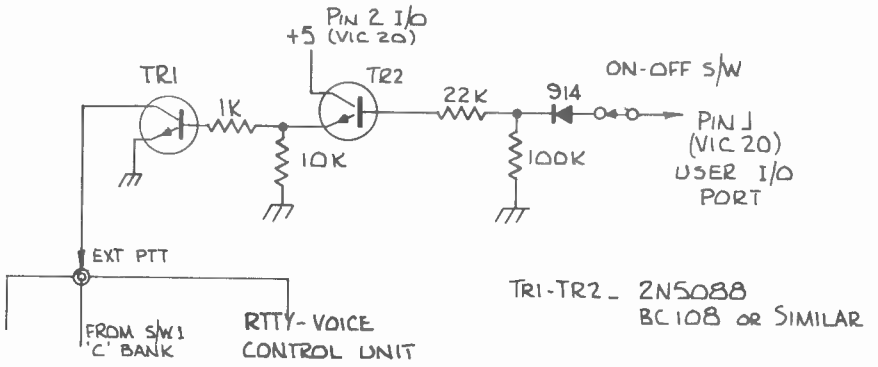
No problems of any kind have arisen over the month or so the unit has been in use on HF and VHF-FM.

All audio (AFSK and Mic) leads should be shielded and shields earthed to the metal box, but DO NOT earth the Mic return leads as these are not directly connected to chassis on some transceivers.

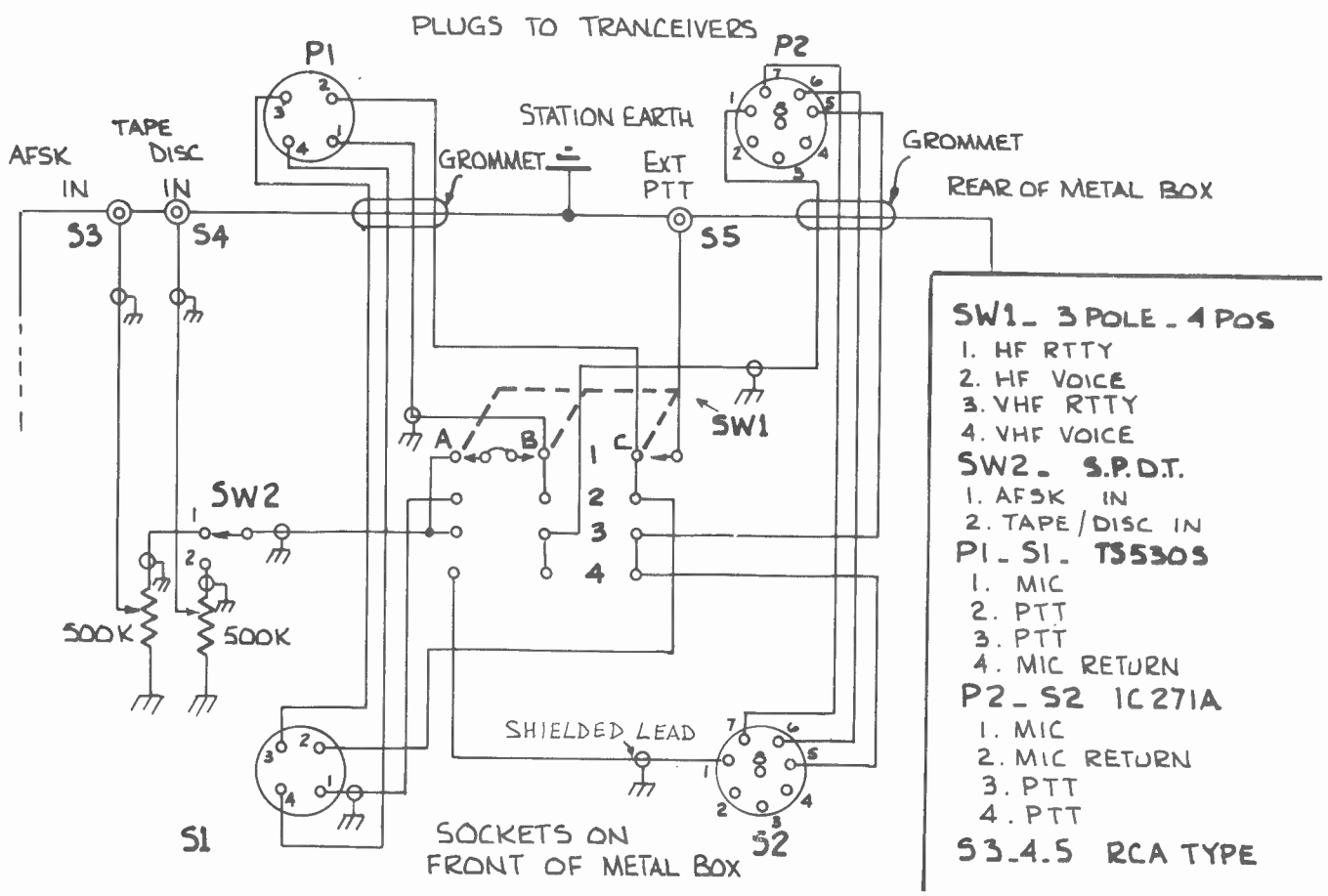
The input AFSK/Tape-Disc pots should be set in conjunction with the transceiver Mic gain controls; on HF to set the required power output and on VHF to prevent over deviation on FM.

External plug leads may be any reasonable length to suit the position of the transceivers and of course sockets and plugs and their connections will be for the equipment in use.

AR



RTTY Auto Switch on from Vic-20 computer



RTTY — Voice Control Unit for two transceivers

EQUIPMENT REVIEW

Ron Fisher VK3OM,
3 Fairview Avenue, Glen Waverly, Vic. 3150

THE TET HB 443DX QUAD BAND ANTENNA

Over the years that we have been presenting equipment reviews in AR, I don't recall any review of an HF beam antenna. Perhaps there are many reasons for this. One would be that it takes time to assemble and put up an HF beam. It then takes time to evaluate performance and, in fact, just how do you evaluate its performance. And one last reason is that so far no distributor has offered us a beam to test.

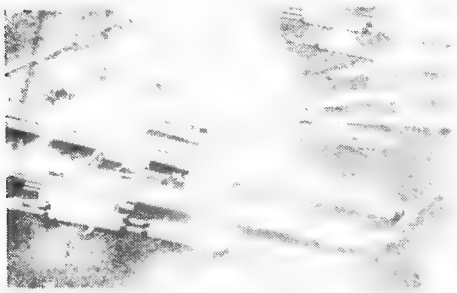
The review of this TET antenna is perhaps more of a personal evaluation. Having used a three element mono band beam on 20 metres for several years and found that it produced excellent results on a comparative basis, I was looking for an antenna that would, hopefully produce similar results on twenty and at the same time give me a few other bands as well.

At about this time, several months ago, Dick VK3ADR imported a selection of the new TET antennas, which happened to include two different models, that not only covered 20,15 and 10 but also 40 metres. Of course I don't have to point out that with the current state of the sun spot cycle 20, 15 and 10 have seen better days. But 40 is really coming into its own. One of these antennas looked like a possible answer. By the time I had decided to buy one, Dick had sold, the lot, but luckily Emtronics in Sydney had some in stock. I took the plunge and bought one.

Within a day or so two large boxes were sitting in the carport and I had several hours of work in front of me.

Before getting down to the work of putting it up on the tower, let's look at the specifications of the antenna.

HB 443DX Active Elements ·7MHz - 3, 14MHz - 4, 21MHz - 4, 28MHz - 4. Boom Length & Diameter. 6 metres, 19.8 feet. 2 inches, 51 mm. Max Element Length. 9.25 metres, 30.5 feet. Weight. 18.0 kg. 39.6 lbs. Gain. 7MHz - 6.2dB 14MHz - 9.8dB 21MHz - 9.1dB 28MHz - 8.8dB. Front to Back Ratio. 7MHz - 12.4dB 14MHz - 21.8dB 21MHz - 22.3dB 28MHz - 20.1dB



"WOW!! This looks like work??"

Like many TET antennas, the HB 443DX uses two driven elements. A phasing section couples the driven element and reflector and this system is claimed to produce a better band width. As we shall later see, this certainly appears to be true. For 40 metre operation these two elements plus the front director are used. These three elements have the distinctive 'pitch fork' end sections. It appears that the outer traps are in fact loading coils that enables the antenna to resonate on 40 metres. With the close spacing of the driven element and reflector, it is perhaps better to consider them as a single element, so overall the 443DX is probably best described as a two element beam on 40. All four elements are active on 20, 15 and 10 metres.

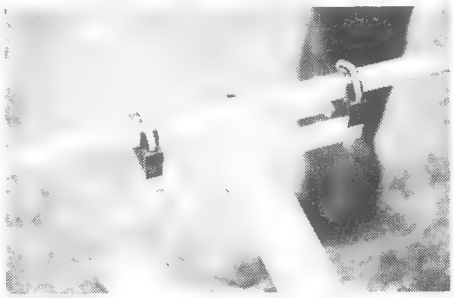
In actual fact, information on these antennas is rather hard to come by and the above specifications were taken from published advertisements. No specifications come with the antenna itself.

As we are now at the point of putting the antenna up a look at the instructions is in order. There are six pages of drawings with measurements. There is no text or instructions as such. If you are not familiar with the construction of antennas like this, consult a friend who is. If you don't know a person like this, then jolly good luck. I feel that a $500 antenna deserves better than this.

Bill VK3ARZ purchased a 443DX at the same time as I did and had his in the air a week or two before I started. I was therefore guided by his experience. First thing Bill suggested was that the boom needed support. It is, after all, six metres long and supporting four fairly heavy elements. Two lengths of clothes line wire with a turn buckle on each side did the job (see photo) but with a slight problem. The phasing harness between the driven element and the reflector was in the way on top of the boom. He overcame this by mounting the antenna up-side down. Make sure that the drain holes in the traps are facing down though and not up.

In the air. Note the clothes line supporting the boom.

Another suggestion, this time from Dick VK3ADR was to strengthen up the boom to element supports for the driven element and reflector. Square section tubing is used which Dick replaced with solid aluminium bars of the same cross section. Bill and myself did not follow this but we are keeping a close watch for any sign of strain at these points.



The boom to element support.

The overall quality of the antenna and its fittings is reasonable. Perfectionists will no doubt complain about the use of self-tapping screws in both the boom and elements. I have heard of cases where they have dropped out. One suggestion is to wrap tape around each point where a self tapper is used to stop this happening. It also seems to be a good idea to position the boom with the screws facing up. Two sizes of element brackets are used, a long one for the driven element and reflector and short (about half length) for the two directors. The problem here is that the front director is almost as long and heavy as the driven element, only time will tell on this one.

THE HB 443DX ON THE AIR

The day we got the antenna up must have had the worst propagation for years. You can perhaps imagine how I felt, however over the last couple of months I feel I have a good idea of its relative performance. Let me say that this is not one of those antenna articles where I will say that the new beam was several 'S' points up on the old one. It wasn't. I suspect that the 20 metre performance is slightly down on the old three element mono bander.

No doubt though, most will be interested in how it worked out on 40. When I first put the antenna up, I chose the middle setting for 40, that is resonance at about 7.1MHz. The other two give a choice of 7.05 or 7.2MHz. Band width for a 2:1 SWR is about 100kHz which for a half size antenna is quite good.

Although set for 7.1MHz, my first 40 metre contacts were up around 7.18MHz where the SWR was almost 3:1. My comparison antennas were a two half waves in phase wire at an average height of 10 metres and an 18AVT trap vertical. Later experiments included a top fed ¼ wave sloper suspended from the top of the tower. Reports were consistent. Two to three 'S' points up on the wire and vertical with little difference between these two and two 'S' points up on the sloper.

At a later date, I changed to the resonant point to the higher 7.2MHz setting with little if any difference to performance. Bill VK3ARZ has drilled a few extra holes to give some intermediate frequency settings giving a 2:1 range of 7.1 to 7.2MHz. Performance on 15 and 10 is an unknown quantity. Conditions have been very poor on these bands and few worthwhile contacts made. I can only guess that the antenna should work reasonably well on these bands due to its relative size. Ask me in three or four years.

The SWR on 20, 15 and 10 is very good. The 1.5 points are in fact the band edges on all three bands. The gain figures specified look somewhat generous but then no reference is indicated.

A full size three element mono band yagi, with luck, might produce 6 or 7dB gain so the 9.8dB specification for 20 metres appears optimistic.

Nevertheless the HB 443DX is an excellent compromise that gives good performance on four bands.

For more details we suggest you contact EMTRONICS, 94 Wentworth Avenue, Sydney, NSW.

AR

SOUTH KOREA BOOSTS TV SET PRODUCTION

In the first eight months of 1984, South Korea's world-wide export of colour TV sets was nearly 1.8 million.

Trade Minister Kum Jin-ho, said this was an increase of 20 per cent over the same period in 1983.

Colour TV set exports between January-August 1984 period totalled $276 million, of which $186 million came from sales to the United States. South Korea has three major television manufacturing companies, Gold Star, Daewoo and Samsung.

Submitted by Jim Linton VK3PC

AR

WICEN NEWS

Jim Linton, VK3PC
4 Ansett Crescent, Forest Hill, Vic. 3134

Recognition, restructure, & revival — the three Rs of WICEN Victoria since Ash Wednesday.

VICTORIA

REPORT

OF THE

BUSHFIRE REVIEW COMMITTEE

ON BUSHFIRE DISASTER PREPAREDNESS AND RESPONSE IN VICTORIA, AUSTRALIA, FOLLOWING THE ASH WEDNESDAY FIRES 16 FEBRUARY 1983

"The resources of the Wireless Institute Civil Emergency Network (WICEN) could have been more widely used to supplement emergency communications," the committee said in its report.

The Victorian Government set up a committee after the Ash Wednesday disaster to examine the bushfire disaster preparedness and response in Victoria. It consisted of Mr Mick Miller (Chief Commissioner of Police, and Co-ordinator of the State Disaster Plan), chairman, Air Vice-Marshal Wilfred Carter (International Disaster Consultant and Australian Counter Disaster College director 1969-1978), Deputy Chairman, and Mr R G Stephens (Principal Advisor, Public Service Board of Victoria).

Among its terms of reference were to examine: *"The effectiveness overall of communications systems operated by State combatting and assisting agencies and whether there is a need for rationalisation of those systems."* And *"The adequacy of field communications systems in emergency/disaster situations."*

WICEN, drawing on its experience and observations gained from Ash Wednesday, made a written submission.

On 7 Februry 1984, Alan Noble VK3BBN, Peter Ford VK3YTB, Derek McNiel VK3BYA, Peter Mitchell VK3ANX, and Jim Linton VK3PC appeared before the committee. Also present was a representative of DOC, and communications personnel from the CFA, Forest Commission of Victoria, and Victoria Police.

It soon became obvious to the WICEN delegation that its written submission had been well read and analysed in advance by the committee.

A summary of the meeting in the committee's report reads:

1 It is apparent from discussions with representatives of WICEN that their organisation has considerable resource capacity throughout Victoria.

2 Arrangements are thus being made for WICEN to have a re-vitalised role within DISPLAN, Police regional co-ordinators would be asked by the DISPLAN Officer to invite representatives of WICEN to participate in Regional Disaster Committee meetings so that their resource capability can be evaluated and expressed in municipal disaster plans.

3 WICEN wishes to operate within the formal structure to provide services to organisations such as SES, DCWS, Health Commission, Red Cross, the Salvation Army, municipalities and other support services without radio communications capability.

4 The DISPLAN Officer will advice the State Disaster Planning Committee, including the above authorities, of this potential resource.

5 WICEN proposes to enhance its organisational structure, training methods and publicity regarding its resource role and capabilities.

6 These proposals are consistent with the principle of community self-help inherent in DISPLAN and should provide a useful auxilliary communications capability to organisations involved in DISPLAN.

Chief Commissioner of Police and State Disaster Plan Co-ordinator, Mick Miller, was chairman of the Bushfire Review Committee. He praised WICEN and described it as a community minded voluntary organisation.

Victorian Government response document to the Bushfire Review Committee Report released by Police Minister Race Mathews had a section called "Radio communications resources". It said: "Wireless Institute Civil Emergency Network (WICEN) to become involved in regional disaster plan meetings and to support Government and other organisations which do not have radio communications capability."

WICEN CO-ORDINATOR, DEREK McNIEL, VK3BYA, OUTLINES THE POST-ASH WEDNESDAY RESTRUCTURE OF WICEN AND ASSOCIATED DEVELOPMENTS.

See January Amateur Radio

QSP

JET PHONE ERA ARRIVES

Airfone Inc has started an air-to-ground telephone service with co-operation of nine major airlines including TWA and Pan Am operating over mainland US, Hawaii and Alaska.

Initially only a few wide-body jets and planes flying along routes are being equipped to make outgoing calls.

To use the service a passenger inserts their credit card into a wall unit which releases a telephone handset.

This is taken by the passenger to his/her seat where they dial the wanted number.

When the handset is replaced their card is returned, and they're billed via their credit card account.

Contributed by Jim Linton VK3PC

AR

'THEY'RE STILL A WEIRD MOB'

. . . That's how others see us.

The Australian amateur is the friendliest to conduct a QSO with, they usually have plenty of time, like to talk about anything and everything, not just the usual '10-4 good buddy' numbers exchange. Most appear to have homebrewed part of their station and one chap is remembered in particular as after a twenty minute QSO he asked his contact to stand by while he propped another book under the chair supporting the uplink antenna.

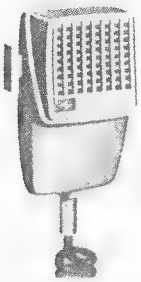
'Anybody recognize themself??'

from OZ — July 1984

Contributed by Allan Johansen VK4KAJ.

AR

AR SHOWCASE



CONTROLLED MAGNETIC® COMMUNICATIONS MICROPHONES

Model 401 Series hand-held communications microphones are compact size, CONTROLLED MAGNETIC® units designed for clear, crisp, natural voice response of high intelligibility. The microphone features:

- *Frequency response from 200 to 4,000 Hz especially suitable for voice communications use*
- *Small, light and compact case, fits comfortably and firmly in the palm of the hand*
- *Extremely sturdy, high impact, ARMO-DUR® case, lighter and stronger than die-cast metal, comfortable to the touch in hot or cold weather*
- *Heavy-duty, long-life, push-to-talk switch*
- *Durable rubber-jacketed coil cable*
- *Rugged and dependable under all operating conditions*

The Model 401 Series microphones are especially recommended for all types of outdoor-indoor communication activity: in mobile and fixed station use and in commercial and industrial applications — including radiotelephone, amateur radio, and similar uses.

Model 401A is a high-impedance microphone with high output level, making it suitable for connection to high-impedance amplifier inputs when cable lengths of 15.2m (50 ft) or less are needed.

Model 401B is a low-impedance microphone and is recommended when long cable lengths are required or under conditions where severe hum pickup may exist. The Model 401B may be connected directly to the input of a low-impedance amplifier, or a Shure Model A95 Series Line Matching Transformer may be used for connecting the Model 401B to the input of a high-impedance amplifier.

For further information contact William Willis & Co Pty Ltd, 98 Canterbury Road, Canterbury, Vic 3126. Phone: (03) 836 0707.

AR

FRG-8800 GENERAL COVERAGE COMMUNICATIONS RECEIVER

In December of this year the FRG-8800 will supplant the world renowned FRG-7700 as the latest Yaesu general coverage communications receiver, bringing the newest advances in technology to the famous Yaesu receiver line that began with the FRG-7.

Featuring a large liquid crystal display with 100 Hz frequency resolution and including a unique multi-colored S/SINPO "bar graph" type indicator, the FRG-8800 also incorporates the Yaesu CAT System, allowing remote power control, mode and frequency selection and signal strength measurement for processing from the operator's personal computer when used with one of the Yaesu FIF-series CAT Interface Units. The CAT System allows the user to programme his computer for the type of receiver operation that he desires, including such functions as unlimited additional memories (the FRG-8800 includes twelve itself as standard) and automatic tuning by station callsign (for broadcast stations) and time, unlimited choice of scanning systems and even voting reception modes to automatically select the clearest frequency of multi-frequency broadcasts. The user can literally build his own receiver functions using most any personal computer and BASIC or any other language.

The FRG-8800 includes a twenty one button keypad for frequency and memory control via the internal eight bit CPU. Additional button switches are provided for mode and wide/narrow IF filter selection, AGC release time, noise blanker, display brightness, tuning rate selection and setting of the twenty four hour dual (local/UTC) clock/timer. The twelve internal memories can be selected by either the keypad or a rotary switch. Three scanning modes are available through the keypad, by which either all or only preprogrammed memories can be scanned, or all frequencies between two memories. Squelch is all-mode, and knob tuning rates of either 6.25 or 125 kHz/rotation are selectable, with steps of 25 or 500 Hz, respectively. The dual clock/timer includes power on/off and "sleep" functions.

The FRV-8800 VHF converter, which mounts inside the FRG-8800, is available as an option to add the range of 118 to 173.999 MHz to the receiver. The FRV-7700 Converters, FRA-7700 Active Antenna, FRT-7700 Antenna Tuner and FF-5 Lowpass Filter originally designed for the FRG-7700 are fully compatible with the FRG-8800.

For further details contact Bail Electronics, 40 Faithful Street, Wangaratta, Vic 3677; Tel. (057) 21 6260.

AR

NEW BROADBAND HF FOLDED DIPOLE ANTENNA

A new broadband HF antenna series has recently become available. Known as the T2FD series they provide continuous operation over the frequency range 1.8 to 30 MHz or 3.5 to 30 MHz, depending on the model.

There are four models in the range. They vary according to power handling capability and frequency coverage. Each model takes on a folded dipole type configuration and exhibits a VSWR of less than 1.5:1 over its bandwidth.

The model T2FD-1.8-30-200 is 50 metres in length, covers 1.8 to 30 MHz and has a power handling capability of 200 watts RMS. The T2FD-1.8-30-2 kW is identical but 40 metres long and rates at 2 kilowatts RMS. Similarly there are two models which cover 3.5 to 30 MHz. They are the T2FD-3.5-30-200 and T2FD-3.5-30-2 kW and are 25 metres and 30 metres in length respectively.

All four models are supplied fully assembled and erect. Each includes a balun.

The 200 watt T2FD's are priced at $149.00 each while the 2 kilowatt version is $189.00. Freight is an extra $12.00. For further details contact GFS Electronic Imports, 17 McKeon Road, Mitcham, Vic, 3132 or PO Box 97, Mitcham. Phone: (03) 873 3777.

AR

TRANSCEIVER KITS

New to Australia kits designed by G3WPO and G4JST as published in the English magazine HAM-RADIO-TODAY. AUSKITS in Victoria are now agents for WPO-Communications and carry exstock the majority of WPO Kits. The latest is their "ALPHA" mono band HF SSB/CW transceiver.

This kit is complete with a very nice looking steel case giving a professional finish. All components down to the last nut and bolt are supplied and with its small size of only 210W x 245D x 60H and 50-watt PEP output it must rate as being one of today's technology products.

Look elsewhere in this issue for more details on this excellent range of kits from Auskits.

AR

"HF MULTI-FREQUENCY MOBILE WHIPS"

Scalar's H500 and H300 series epoxy covered HF whips are pre-tuned multi channel antennas. Channels are changed manually with a shorting strap which connects the wanted channel into service. Up to ten channels can be provided.

The antennas offer reliable performance, feature black epoxy resin finish to make them tough, yet still flexible. They have clear precise frequency marking and the wanderlead length marked on the whip in case of loss or damage.

Three varieties of whip tops are available. H500/T series covers frequencies 2-15 MHz and is two metres in length. H500/2T series covers frequencies 2-15 MHz, is a split antenna complete with canvas carry case. H300/T series cover frequencies 3-15 MHz and are one metre in length. (NOTE Number of channels will depend on frequencies required.)

A variety of antenna bases — utility, standard and de-luxe are available plus heavy duty stainless steel springs.

It is important to always specify frequencies required when ordering.

For further information please contact Scalar Industries Pty Ltd, 20 Shelley Avenue, Kilsyth, Vic. 3137. Phone (03) 725 9677 or Sydney (02) 502 2888, Brisbane (07) 395 1188 or (07) 395 1817, Perth (09) 446 9177.

AR

RTTY TODAY

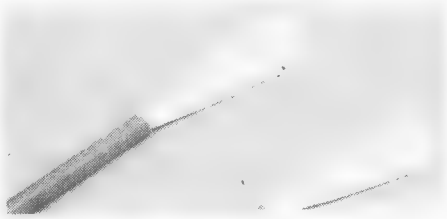
The world of Radioteletype has traditionally been recognised as one of amateur radio's most popular areas of specialised communications. This situation is particularly true today because of two independent reasons: RTTY gear has progressed into the electronic rather than mechanical category, and because a vast number of radio amateurs have become interested in printed word communications.

Realising that several books have been written on the technical side of specialised communications and RTTY, this book thus focuses on more basic and factual areas of what's available, exactly what it is, how it interconnects, and how they are used. This layman's guide to modern RTTY could easily be categorised as "must reading" for any amateur interested in joining the activity of amateur teleprinting.

Several innovative concepts have recently affected RTTY: AMTOR and ASCII are two examples. Discussions of these teleprinting concepts are included in several chapters for your knowledge and use. As you will also notice, this book is written in an "amateur to amateur" manner . . . hopefully conveying the same friendliness and understanding of a personal visit with the author as your host and guide to an exciting new area.

RTTY Today was written by Dave Ingram K4TWJ and is available from EMTRONICS, 92-94 Wentworth Avenue, Sydney, NSW, 2000. Phone (02) 211 0988. Price $15.

AR



NEW NON-CONDUCTIVE, NON CORROSIVE, HIGH STRENGTH WIRE SUBSTITUTE FOR GUYING AND OTHER SUPPORT APPLICATIONS

GFS Electronic Imports recently released a new alternative guy wire manufactured using continuous yarn fibreglass filament and vinyl chloride sheath. Known as Debeglass Wire, GFS claim it offers its users a number of advantages over using steel as a guy wire.

Some of these advantages include a higher tensile strength than steel wire of the same diameter, no corrosion, as well as lighter in weight than an equivalent diameter of steel wire. As Debeglass wire is not conductive there is no requirement to use insulators over its length as there is with steel. Additionally, unlike steel, it exhibits extremely low elongation.

Debeglass is available in three sizes, 4mm, 5mm and 6mm diameter. The tensile strength of DB-4 is 430 kg, DB-5 is 560 kg while DB-6 is 970 kg.

A wide variety of applications exist for Debeglass wire in many areas from the guying of radio masts to the supporting of HF antenna arrays. It is also uniquely suited to use in marine and other highly corrosive environments.

Stocks of the DB-4 and DB-5 (4mm and 5mm) are readily available while the DB-6 may be obtained on special order. DB-4 is priced at 48 cents per metre with DB-5 at 68 cents per metre.

For further details contact GFS Electronic Imports, 17 Mckeon Road, Mitcham or PO Box 97, Mitcham, Vic, 3132. Phone: (03) 873 3777.

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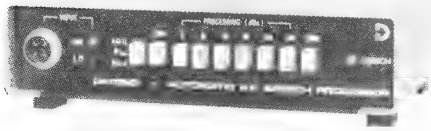

AUTOMATIC RF SPEECH PROCESSOR

Modern amateur radio communications take place amid great congestion and interference of all kinds. The vital objective is to have a signal which stands out from the rest.

Datong Model ASP helps you achieve this in two ways. Firstly it increases the average power output from your transmitter. Secondly it makes your voice sound 'punchier' and louder for a given S meter reading.

Despite these very real benefits it simply installs in series with the transmitter's microphone. The technique of RF clipping used in Model ASP has been well proven in the many thousands of Datong RF clippers currently in use world-wide by amateurs and professionals. 'Datong clippers' have earned a reputation for giving clear punchy speech while increasing effective SSB signal levels by up to two 'S' points.

Now Model ASP gives all the same benefits but with the added convenience of automatic setting up adjustments and push-button selection of processing level.

For further information contact EMTRONICS, 92-94 Wentworth Avenue, Sydney, NSW, 2000. Phone (02) 211 0988.

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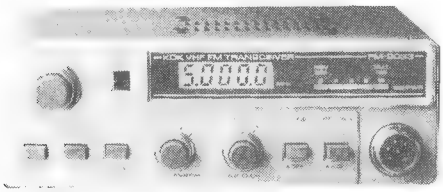


MICROPROCESSOR CONTROLLED MOBILE TRANSCEIVER

For driving safety a transceiver should be operable by touch only. However, the many necessary functions and features adds to the complexity of the state-of-the-art mobile transceiver. KDK's FM-2033 satisfies both these requirements by using multiple shaft, multiple function rotary switches/controls plus a few push buttons to command a new C-MOS microprocessor.

The most frequently used controls are grouped together to form the unique KDK 6-in-1 control system. An electronic alarm beeps whenever the dial reaches the upper or lower band edges, lowest or highest number memory or max + or – RIT. This sets up a home position from which accurate dialing is possible by counting dial clicks.

Frequency and offset data can be entered in all memories and a LCD (liquid crystal) display insures visibility in bright sunlight.

Priced at $349 the KDK FM-2033 2 m FM C-MOS microprocessor controlled digital synthesised mobile transceiver is available from EMTRONICS, 92-94 Wentworth Avenue, Sydney, NSW, 2000. Phone (02) 211 0988.

AR

RF CONTROL YAGI ANTENNAS

Scalar model Y415PT has been specifically designed for use in "RF control" operations, and conforms fully to the relevant draft specifications RB234C. It is a fifteen element yagi antenna with a multi-element reflector and supplied either as a centre mount elbow or with an end mount. Constructed of high grade seamless aluminium, it will see many years of reliable service.

SPECIFICATIONS:

Frequency	:400-520 MHz (specify)
Nom impedance	:50 ohm
Forward gain	:14dBd
VSWR at FO	:TYP 1.3:1
VSWR bandwidth	:TYP 0.5%
Max power rating	:500 watts
H plane 3 dB beamwidth	:35°
E plane 3 dB beamwidth	:32°
Weight (at 460 MHz)	:Approx 1.6 kg
Wind loading at 160 km	:15.5 kg at 460 MHz
Construction	:High grade aluminium
Length at 400 MHz	:2.56 m
Termination	:Cable tail to N type female
Rec connector .	:Acme C39-07 (RG8)
Boom/elbow mount diam	:25 mm
Recommended clamp UB1	

Note sidelobe levels at any angle greater than 55° from the centre of the main lobe will be at least 17 dB below the forward gain.

For further information please contact Scalar Industries Pty Ltd, 20 Shelley Avenue, Kilsyth, Vic. 3137. Phone (03) 725 9677 or Sydney (02) 502 2888, Brisbane (07) 395 1188 or (07) 395 1817, Perth (09) 446 9177.

AR

RF DIRECTION INDICATOR

Datong Model DF is a Radio Direction Finding (RDF) system which is designed as an add-on accessory for any existing narrow band FM communications receiver or transceiver. The only connections required to the receiver are to the antenna input and the external loudspeaker jack.

The system comprises two separate units. One contains control and display electronics and is located at the receiver; the other is a special antenna combining unit containing its own drive electronics and requiring only a single coaxial cable to connect to the control unit.

Directional read out is via sixteen green LEDs arranged in a circle at 22½° intervals.

When a signal is received its bearing relative to the antenna is indicated by whichever of the sixteen LEDs illuminates. In mobile applications this permits "homing" onto the signal, and at fixed stations when the antenna has been correctly aligned the compass bearing of the signal is directly indicated.

When used with transceivers an RF activated relay built into the control unit allows 'talk through' by diverting the transmitter signal to the normal antenna.

Model DF will work with FM receivers ranging from pocket scanners to mobile or marine radio telephones and including VHF amateur radio transceivers.

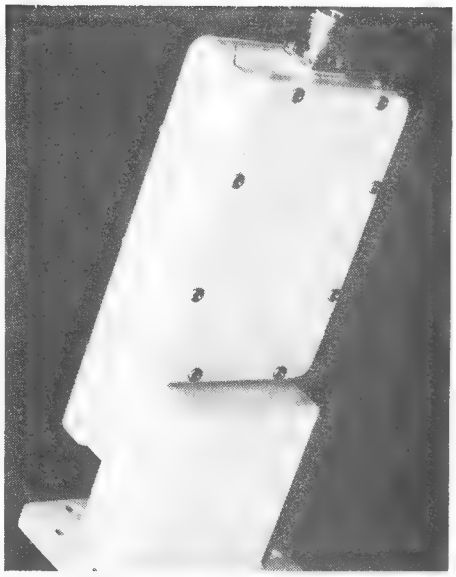
In addition to the display unit and the antenna combiner unit, a complete system needs four omnidirectional antennas (eg: conventional quarter wave whips or half wave dipoles) mounted in a square array.

For further information contact EMTRONICS on (02) 211 0988.

AR

NEW HIGH PERFORMANCE, LOW PRICE C-BAND LNA

GFS Electronic Imports recently announced the



introduction of a new 3.7 to 4.2 GHz, 100 degree Kelvin Low Noise Amplifier. Known as the NJS 8405 C and engineered in Japan, it is designed for C-Band satellite TV reception applications. Price is $499 including sales tax.

It's other features include a gain of 50 dB typical with a minimum of 48 dB. Maximum noise temperature is 100 degrees kelvin and gain flatness is within ±1.5 dB over 3.7 to 4.2 GHz. Input VSWR shows typically 1.3:1 with a maximum of 1.5:1. Operating supply voltage is +12 volts to 24 volts at a 150A maximum. RF input to the NJS 8405 is via a 29 1 mm x 58.1 mm waveguide while output is through a rear mounted N connector. DC power input is also via the N connector.

For further information contact GFS Electronic Imports, 17 Mckeon Road, Mitcham, Vic, 3132 or PO Box 97, Mitcham. Phone: (03) 873 3777.

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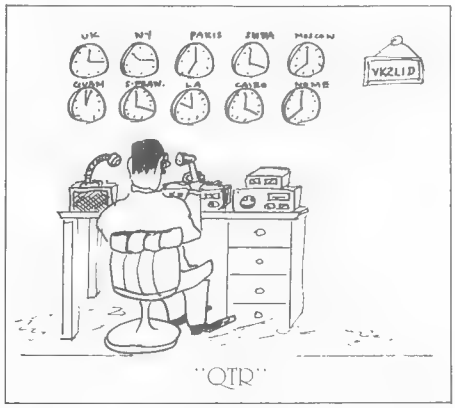
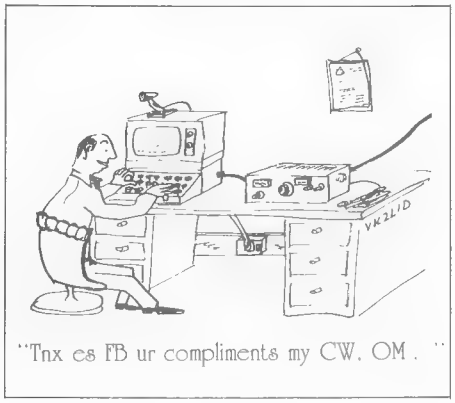




CALLING ALL SWLs!

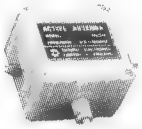
Besides our extensive range of SWL Accessories, such as Active Audio Filters, Pre-selectors, Active Antennas etc., we ALSO carry Antenna Tuners for Shortwave and Communications Receivers to improve the reception and efficiency of your receiving system.

MIZUHO: SX-3 PRE-SELECTOR

$120

Is your Receiver or Transceiver deaf? Then the only solution is the "SX-3" — an 18dB Pre-Amplifier.

DATONG — AD 270 $139 AD 370 $199



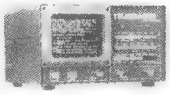
Active Receiving Antennas
Models 270 & 370
Ultra-compact Receiving Antenna Systems giving wideband coverage from 200kHz to 30MHz at high sensitivity.

SPECIAL FOR SWL: THE NEW TELEREADER

CWR 670 E $399

CWR-670E Telereader Receive Only. The compact, multi-mode CWR-670E Receiver operates conveniently with display and/or printing equipment.

TELEREADER



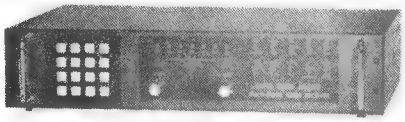
CWR-675E

Complete with printer $999.

New wonder machine especially designed for the inquisitive shortwave listeners, amateurs, professional monitoring institutions, Government, Press, etc
An entire new world is opened to those who are willing to explore it. Monitoring weather, press, ship traffic, embassies, Interpol and many unusual services can prove to be fun! And for permanent record, just press the button and the inbuilt 40-column printer will do the rest for you.

Now you can receive:
CW, RTTY, ASCII, TOR, SITOR, AMTOR with the new

INFOTECH-M600A



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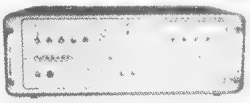
WRAASE ELEKTRONIK



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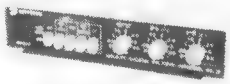

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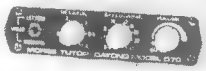

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- **Select AGC**
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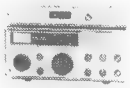

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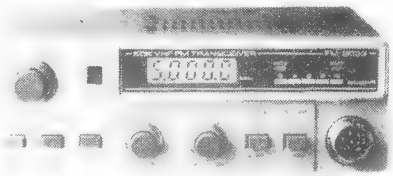

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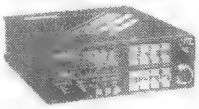

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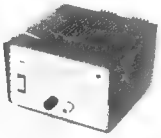

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240V 50Hz INP.

13.8 VDC-10A cont, 15A surge out.

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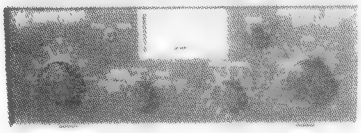

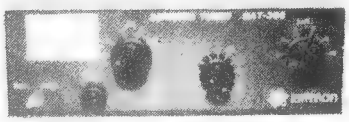

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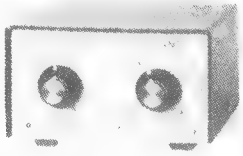

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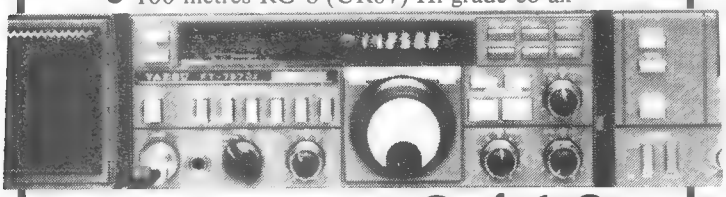

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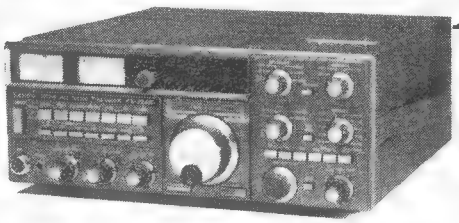
PLU



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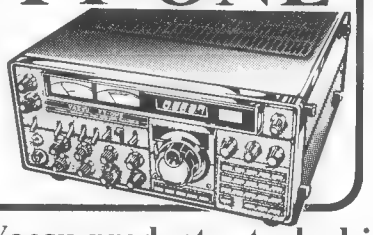

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AND A GOOD TIME WAS HAD BY ALL . . .
at the Mildura Get-Together

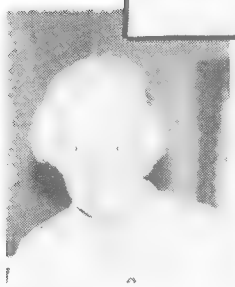
1

2

Marilyn VK3DMS presenting a sheaf of flowers to Foundation President Norma VK2DJO ex 3AYL.

3

4



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7

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1. Poppy VK6YF. 2. Marlene VK2KFQ. 3. Judy VK5BYL. 4. Helene VK7HD. 5. Joy VK2DIX. 6. Joy VK5YJ. 7. Mavis VK3BIR. 8. Sandra VK4ACJ. 9. Meg VK5AOV. 10. Marlene VK5QO. Main photograph — Some of the YLs at the Mildura weekend.

Photographs by Earl VK3BER

NOVICE NOTES

Ron Cook, VK3AFW
Technical Editor

DECODING THE MODES

The new Department of Communications' regulations handbook will shortly be available. It is an update of the present one and is intended to be an interim book as the regulations are being rewritten to suit the new Radio Communications Act. One of the changes incorporated in the interim handbook concerns the types of emissions authorised by various amateur licences. These are listed in the 1984/85 Australian Radio Amateur Call Book. The symbols used look quite complicated. This article sets out to explain their meaning.

The regulations state that the Novice Amateur Operator may transmit within the bands shown in table 1. The modes or types of transmission that may be used are listed as 200HA1A, 8K00A3E, 4K00R3E, 8K00B8E/B8W, 4K00H3E, and 4K00J3E. Is that clear? If so you may skip the rest of this article. The modes are coded according to international convention as set out in Article 4 of the International Telecommunication Convention. As a member country of the International Telecommunication Union Australia was obliged to adopt the new method of designating transmissions on 1.1.1982.

Table 1 — NAOCP Authorised Bands

3 525-3.625 MHz
21 125-21 200 MHz
28 100-28.600 MHz

All transmissions are designated, by seven or more symbols, according to the necessary bandwidth, the basic emission characteristics and any supplementary characteristics as follows.

NECESSARY BANDWIDTH

The first four symbols — three numerals and a letter — specify the occupied bandwidth. The occupied bandwidth is the bandwidth necessary to contain 99 percent of the mean power radiated. The bandwidth is expressed in Hz, kHz, MHz, or GHz. For example a 200 Hz bandwidth is designated as 200H, a 4 kHz bandwidth as 4K00 and a 6.25 MHz bandwidth as 6M25. These are bandwidths suitable for CW, SSB and video respectively. For the Australian Amateur Service the necessary bandwidth should be understood to mean the maximum allowable bandwidth for any mode.

BASIC EMISSION CHARACTERISTIC

The next three symbols describe the mode of modulation, the type of modulating signal and the type of information transmitted.

The first of these symbols describes the modulation of the carrier as follows:

N unmodulated carrier
A double-sideband
H single-sideband, full carrier
R single-sideband, reduced carrier
J single-sideband, suppressed carrier
B independent sideband

The second of these symbols is a number that describes the nature of the modulating signals:

1 single digital channel
3 single analogue channel
8 two or more analogue channels

The third of these symbols describes the type of information transmitted:

A telegraphy to be received by ear (aural reception)
E telephony
W combination of the above

It should be noted that the above lists apply to novice licensees only and those with more privileges such as holders of the LAOCP will need to be familiar with more symbols.

WHAT DOES IT ALL MEAN?

Let us now examine the emission codes allowable for novices.

200HA1A This means CW transmission sent at hand key speeds. More exactly the allowable bandwidth is 200 Hz. There are two sidebands generated. It is a single channel containing telegraphy for reception by ear. There are no tones transmitted but the action of making and breaking the carrier does actually produce some sidebands. This can be proven with a good spectrum analyser or by some moderately complex mathematics. All the novice needs to know is that a bandwidth of 200 Hz is adequate for CW. Of course the novice knows that if the carrier is broken too sharply key clicks may be generated. Key clicks are in fact sidebands generated by the keying of the carrier and must be minimised, consistent with attaining adequate keying speed. Too much suppression will give too soft a keying characteristic and result in a poor signal. Too little suppression and the sidebands will extend so far as to be objectionable.

8K00A3E This mode was once just called AM. It is a signal occupying up to 8 kHz with both sidebands, one channel, telephony (phone). The highest transmitted audio frequency is, of course, 4 kHz. The modulator system must therefore be bandwidth limited. Novices cannot transmit "hi-fi" audio; nevertheless 4 kHz is adequate for good communications quality. Although this designation may appear not specifically to cover DSB as it mentions a modulated carrier in the preamble, I have been assured by DOC staff that DSB is covered by this category.

4K00R3E This is a SSB phone transmission with some carrier. I am not sure why a Novice would want to use this mode. There is scope for experiments with synchonised detection but this would not be easy for the novice to undertake. It does not mean that the DOC is unconcerned about carrier suppression being considerably worse than "state of the art". All amateur transmissions should be of high standard.

4K00H3E This is a SSB phone transmission with full inserted carrier. It would be used to provide an AM receiver with a compatible signal. Many of the SSB transmitters that have an AM mode use this technique. There is no difficulty in meeting the 4 kHz bandwidth requirement in those transmitters as the audio is passed through the SSB filter.

4K00J3E This represents the normal SSB signal (USB or LSB) and requires no further comment.

8K00B8E Now this is an unusual one. It means that if you want to run two different phone signals, one on upper-sideband and one on lower-sideband then providing the bandwidth is less than 8 kHz you may do so. Perhaps this is to cater for two amateur families!

8K00B8W This is essentially the same as the last code. Providing the bandwidth is no more than 8 kHz the novice may transmit two independent sidebands of telephony. Telegraphy, on my reading of the regulations, cannot be combined with simultaneous telephony by a novice although a holder of an AOCP could do so.

WIA BAND PLAN

In order to promote orderly operating and enhance the prospect of successful QSO's the WIA recommends that novice operation is confined to sub-bands according to mode as follows:

CW 200HA1A	*3.525-3.535 MHz*
	21.125-21.150 MHz
	28.150-28.200 MHz
SSB 4K00J3E	*3.535-3.620 MHz*
	21.150-21.200 MHz
	28.300-28.600 MHz
AM 8K00A3E	*28.200-28.300 MHz*

QRP DSB should be acceptable in either the SSB or AM sub-bands. Note that the top 5 kHz on 80 m and the bottom 50 kHz on 10 m should be kept clear for other modes not authorised by the NAOCP.

UPGRADING

Before you upgrade to a limited or full licence it will be necessary for you to study the regulations handbook and become familiar with the additional modes allowed for these licences. A most useful publication, for those who cannot wait, is given as reference 2 below. I am sure that DOC would not welcome 8,000 requests so, unless you have a particular need, I suggest waiting until the new Regulations Handbook is published.

So to the close of another year. I would like to wish all a very Merry Christmas.

73 de VK3AFW

References: 1. 1984/85 Australian ohm Amateur Radio Call Book

2. Statement Regarding New Method of Designating Emission Characteristics of Radio Transmissions, issued by DOC.

AR

QSP

SAFETY AT HOME

A recent report from the UK Consumer Safety Unit of the Department of Trade and Industry has given details of fatal accidents directly and indirectly involving electrical equipment in and around the home in the UK between 1977 and 1980. Taken overall, there has been a steady average number of deaths from electrocution of about 35 per annum, but there has been a steady fall in what the report refers to as "non-electrocution deaths involving electrical equipment. Twenty three per cent of cases were attributed to "falls and errors of judgment"; misuse and abuse of appliances were responsible for twenty six per cent and do-it-yourself work accounted for another twenty three per cent. In only nine per cent of cases was age given as a factor.

The total number of accidents attributed, at least in part, to inadequate earth continuity was given as fourteen per cent of the number of accidents. The DTI feel that "Although . . . the incidence was relatively low, it is felt that this figure could have been significantly reduced if there had been a greater awareness on the part of users of the dangers arising from inadequate earth continuity, and if this awareness had in turn led to better installation and maintenance of all forms of wiring and appliances."

from Rad Com — September 1984

AR

* * *

People who know the least seem to know it the loudest.

* * *

Harry Hamateur is getting a lot of exercise these days. He runs down his friends, jumps at conclusions, sidesteps responsibilities and is always pushing his luck. from Collector & Emitter — March 1984

A T N ANTENNAS have been made distributors in Australia for Mirage Communications Equipment Incorporated.

Mirage Communications Equipment Incorporated is a United States-based company who manufacture a large range of the highest quality amplifiers for 6 metres, 2 metres and 70cm. The product is covered by a five-year warranty on all items except the power transistors, which have a twelve month warranty.

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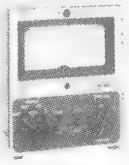

MP1 HF Peak Reading Wattmeter

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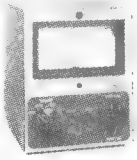

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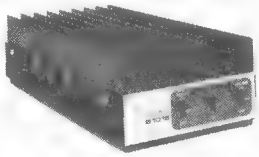

A1015 — 6 Metre Amplifier

FEATURES: • Built-in Receive Preamp • Remote Keying • Remote Control Capablities • 10 Watts In — 150 Watts Out • All-mode Operation (SSB, CW or FM) • Built-in Thermal Protection

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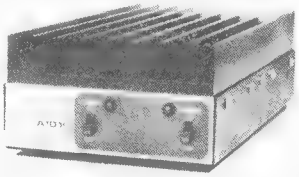

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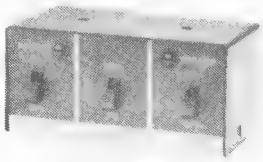

D3010 430-450MHz Amplifier

FEATURES: • All-mode FM, SSB, CW, ATV • Adjustable delay for SSB • Remote control operation with optional RC-1 Remote Head • Hi-Power Input

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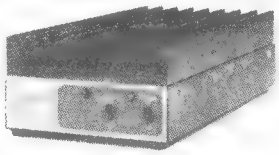

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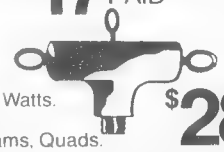

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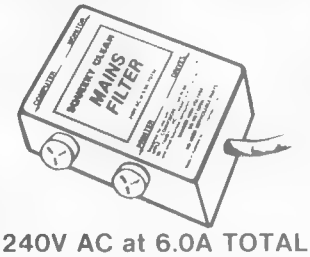

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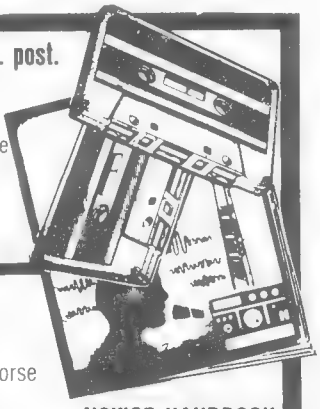

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TRY THIS

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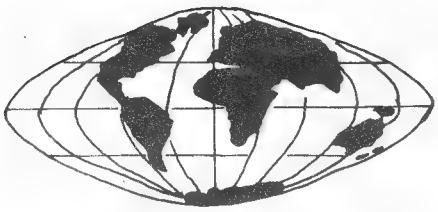


VHF UHF - an expanding world

Eric Jamieson, VK5LP
1 Quinns Road, Forreston, SA 5233

All times are Universal Co-ordinated Time and indicated as UTC

AMATEUR BANDS BEACONS

Freq	Callsign	Location
50.005	H44HIR	Honiara
50.008	JA2IGY	Mie
50.020	GB3SIX	Anglesey
50.075	VS6SIX	Hong Kong *
50.109	JD1YAA	Japan +
50.945	ZS1SIX	South Africa
51.020	ZL1UHF	Mt Climie
52.033	P29SIX	New Guinea
52.100	ZK2SIX	Niue
52.150	VK0CK	Macquarie Island
52.200	VK8VF	Darwin
52.250	ZL2VHM	Manawatu
52.300	VK6RPH	Perth
52.310	ZL3MHF	Hornby
52.320	VK6RTT	Carnarvon
52.325	VK2RHV	Newcastle
52.350	VK6RTU	Kalgoorlie
52.370	VK7RST	Hobart
52.420	VK2RSY	Sydney
52.425	VK2RGB	Gunnedah
52.440	VK4RTL	Townsville
52.450	VK5VF	Mount Lofty
52.465	VK6RTW	Albany
52.470	VK7RNT	Launceston
52.490	ZL2SIX	Blenheim
52.510	ZL2MHF	Upper Hutt
144.019	VK6RBS	Busselton
144.420	VK2RSY	Sydney
144.465	VK6RTW	Albany
144.480	VK8VF	Darwin
144.550	VK5RSE	Mount Gambier
144.600	VK6RTT	Carnarvon
144.800	VK5VF	Mount Lofty
145.000	VK6RPH	Perth
147.400	VK2RCW	Sydney
432.057	VK6RBS	Busselton
432.410	VK6RTT	Carnarvon
432.420	VK2RSY	Sydney
432.425	VK3RMB	Ballarat
432.440	VK4RBB	Brisbane
1296.171	VK6RBS	Busselton

** VS6SIX on 50.075 is again included as it is being widely reported being heard in Japan.*

+ There seems some confusion over the exact frequency of the JD1YAA beacon. In the 50 MHz DX columns of the Japanese "CQ ham radio" magazine it is listed frequently, some times 50.109, others 50.110. I am staying with the original listing unless specifically told otherwise from Japan.

From the same magazine is mention of BY5RA in China as being on 50 MHz, and apparently Graham VK8GB mentioned the same thing to Graham VK6RO. It seems quite likely, as BY1PK, BY4AA, BY8AA, BY1QH, BY1PK apparently are on HF, so it seems unlikely 50 MHz would be missed out. Should be possible to work BY5RA under similar circumstances of an opening to Japan, and this could occur during this summer Es period or during March and April 1985.

It is also noted from the "CQ ham radio" magazine that JA contacts in the main have been restricted to JD1, HL and VS6 plus an occasional contact to VK8 or VK4 during late May to end of June.

AREAS TO THE SOUTH

Further to my information last month re David VK0CK staying at Macquarie Island until March, and keeping 6 metres activated, Gil Sones VK3AUI has advised that 6 metre operation will be continued on Macquarie Island throughout 1985 by VK0YL (Denise) who works as a meteorological observer. Gil has made an EPROM for the beacon keyer, and Ken VK3AH is making sure it gets to the new operator.

So all you people who missed out last year might have an opportunity of making it to VK0CK between now and March or to VK0YL afterwards. All operators are asked to keep their contacts brief to allow as many as possible to share in this rather rare 6 metre country. Please read last month's notes on this important point. Most contacts should be finalised in one minute and if repeats are necessary then two minutes! All that David needs to know from you is your call sign, signal report and possibly your name. If he is handling a mass of signals he will not be interested in what gear you use, how big your antenna is or what the weather is like! *So, please be brief.*

Mark VK5AVQ got away around the end of September for Mawson, on the Antarctic continent, via Africa, so it may be awhile before we hear from him, but he still plans to activate 6 metres from there so be patient!

NEWS FROM MELBOURNE

It's a rare thing to hear from Melbourne, but Doug VK3UM has sent another interesting letter, and what is of interest to readers has been extracted.

"Gordon VK2ZAB and I (VK3UM) have maintained Saturday and Sunday morning skeds all the year on two metres (except when he was in USA and I was in NZ) and simply put we have missed only twice! Both occasions were during storm conditions where he or I had noise or wind problems. Signals at times reach S5 and we have noted S7 on rare occasions. The norm is between S1 and 4 each morning. Others who join in are Ross VK2DVZ and Brian VK2QP. Roy VK2RY in Cooma pops up regularly. The Canberra boys are always represented very well with Ian VK1BG the main stay. Others include VK1RK, VK1ZQP, VK1VP, VK1KAA, VK1KRS and a few others who escape me at the moment. Signals vary (aircraft enhancement) from S3 to S9+ but never miss.

"Thus this path has been proven and as I will describe later we are or have moved my main concentration up to 432 MHz. I have spoken many times to VK1BG on 432 via aircraft enhancement.

"Other activity has been on moonbounce. I actually had up for an hour eight 13 element 22 feet yagis but the structure proved too dicey and I pulled it down before it fell down! Never had a feed line on it sad to say!

"I used the four bay array up until 22/23 September EME contest and had full Az/El tracking, and had the odd EME QSO but no serious concentration was given to the activity.

"The September 22/23 EME Contest weekend was my last fling on 2 metres EME. Conditions were poor to USA and fair into Europe. The big guns in Europe were peaking +12 dB out of the noise but fading was intense. I managed to pick up nine QSOs which included three to USA, DL8, F6, SM2, SM7, UA1 and YU4. This must be the ultimate amateur contest! Total random EME QSO's (no skeds etc) really sorts things out. I had up to three times as many part QSOs which is most frustrating.

"Regardless of being the only VK with steerable 2 metre EME capabilities and the resultant requests for QSOs, I have pulled the array down and replaced the four bay with the TH6 (really?) and one thirteen element. Hurts Gordon and I but we can still work. By the way, Trevor VK3KEG now has 4 x 13 up as a result of my eight bay folly and is doing very well out of Frankston.

"Accordingly, I have now ruled off my 2 metre EME log with thirty nine QSOs in fourteen countries. My decision to give it away on 2 metres is due to a number of factors, but basically:

"1: I have insufficient gain (antenna) to reliably hear my own echos. 2: Can only work eight bay or larger stations. 3: Can't work random QSOs. 4: RFI is a problem! 5: A larger antenna is out of the question. 6: Sky noise on two is a limitation. 7: 'Been there done that' syndrome.

"However, the big news is that we have the VLA (very large array) up on 432 MHz. It consists of sixteen 16 element 12 feet yagis (256 elements) using five 4 port couplers all phased together with Belden 9913 and N connectors (41 of the things and my hands are still sore!). Mechanically it is nicely balanced and electrically is spot on without going stupid with heliax and associated connectors. The loss from feed to any driven element is about 0.2 dB. I have tacked the MGF1402 pre-amp at the fifth power divider (less than 0.7 dB n/f measured) for measurements and await the second EME weekend (20/21 October) for signals. At present I have only 80 watts but hope to stir Gordon up with this anyway! However, the 4CX250B's amplifier is 75 per cent completed.

"The Az/El tracking system works great. Beamwidth is less than 10 degrees (E & H) and sun noise 15 dB, and estimated gain at this stage to be 25 dBd, and after some attention to fine detail should be equivalent to a 28 foot dish, and although not having polarisation selection theoretically will provide SSB echos. We will see!

"Terrestrially it will be beaut to VK1 and VK2, but not so good to VK5 although the Ballarat beacon is quite audible, main limitations for such work is the lack of height.

"It's set up for the moon where I have an open view until the moon reaches -23° declination when I will then foul the other tower and fire through our bedroom window below 10° elevation.

"Finally, it could be a good season with VK3 strongly represented with VLAs on 2 and 432. I am looking forward with considerable interest to 'just find out what is possible' on 432 MHz from here, viz, scatter, meteor, Es etc.'"

Thanks for writing Doug, and we all wish you well with your new round of experiments and we look forward to hearing the end result in due course.

EME CONTEST

The second part of the world wide EME contest was held over the weekend of 20/21 October. Random QSOs were the order of the day. It's too early to be able to say what the results were as I write these notes on 21/10 but it seems there were quite a lot of stations operating.

Chris VK5MC, that very keen EME operator from the south east, sent me a computer printout of the position of the sun and the moon for the period of the contest, so with nothing to be lost I decided I might just have enough gain on 144 MHz to hear a station or two. The system here consists of thirteen over thirteen yagis at 87 feet with a GasFET masthead pre-amp. The actual results rather confounded me.

Because I cannot elevate my system I was restricted to operating with the moon setting or rising, and as my stacked beams have a vertical beamwidth of 5 to 6 degrees only, was restricted to about twenty five minutes of operation, particularly as I do not have a zero degrees horizon living here in the hills. The setting moon has a 5.3 degree horizon and the rising moon a 4 degree horizon.

The daytime run on 20/10 for me therefore started at 0302 UTC and ended at 0330 UTC, and three stations were copied, the best being SM5BFK at good CW copy. I decided to be brave and got out of bed for the rising moon at 1815 UTC (0345 local) and the first station copied was K5GW at 1835 and until the moon rose above the horizon of my antenna system at 1856 UTC I had copied five stations. The same day (21/10) the setting moon provided the first signal at 0417 and the last at 0440 when the moon went behind my 5.3 degree horizon, but in this short time had yielded six stations. An all up total of fourteen stations copied at varying levels, all of which are on tape for further checking.

What this all means of course, is that with quite a number of EME stations sporting large antennae

those with less than optimum systems still have a chance to hear signals. When the system gain between the two stations are added together there obviously is enough for something to be heard.

A bonus for me this time has been the opportunity of making some evaluations on how my 2 metre setup is working, I now know how high my east and west horizons are in degrees, I know my vertical beamwidth, I know my rotator is spot on for direction in azimuth, and I also took the opportunity to run some tests on sun noise measurements so its been a fruitful time.

Chris VK5MC has advised he will pass on to me suitable information in time for it to be included in "Amateur Radio" for the 1985 EME contests, and hopefully more of you will take the opportunity of having a look at your systems on 144 and 432 MHz. It's a very interesting exercise and you will find out quite a few things as I did. Incidentally, I did not seriously check 432 MHz as I have only one 16 element and pre-amp and that's probably stretching the friendship a bit to expect too much with that system, but things may be improved considerably in that department before next year!

VHF/UHF MOBILE

It is not often someone is prepared to go mobile and cover so much spectrum but Bob VK5ZRO certainly gave it a try, as briefly reported last month, with 50 watts on 52 MHz, 120 watts on 144 MHz, 10 watts on 432 MHz, and 12 watts on 1296 MHz FM.

On 14 and 15/9 Sid VK5ME was worked direct from 2 metre mobile (to Adelaide) from Whyalla, while on 15/9 on the way home worked Sid on 1296 mobile FM from Locheil, with signals peaking to S9+ both ways.

On 20/9 loaded with the same gear Bob decided on a weeks trip to Brisbane, covering 6000 km. Repeater coverage was adequate for most of the trip, although an area around Ouyen in north west Victoria to Griffith in NSW was fairly bare, except for the Swan Hill repeater, in a temporary position.

Using 120 watts into a Hustler collinear on two metres gave Bob a range up to 130 miles (210 km) to some repeaters with no lift conditions. He found coverage on the Pacific, Hume and Western Highways excellent, except from Nhill to Coonalpyn, which was blind except for occasional bursts from Adelaide VK5RAD. The Grampian UHF repeater on 438.675 gave tremendous coverage from Nhill to Ballarat (with 10 watts). UHF repeaters Mt Macedon, Albury, Canberra (when in final position), Sydney, Newcastle gave coverage most of the way with 10 watts except in occasional bad terrain. Adelaide UHF repeater gave fair performance only. Range wise, Bob started to work it at Tailem Bend only to lose it at Murray Bridge and thought its performance was better twelve months ago.

Highlights of the trip radio wise; he worked Rodney VK2CN mobile cross polarised from approximately 70 km north of Newcastle into Newcastle on 1296 MHz FM 10 watts with signals varying to S9+ on 24/9. On 25/9 worked Ross VK2ZRU at 0805 who was in Sydney, on all four bands from Mt Gibraltar with 6 m 5 x 3, 2 m, 432 and 1296 all S9+. From this same stationary position worked Dick VK2BDN on 1296 5X9+, and Roger VK2XJ also on all four bands!

After leaving Mt Gibraltar proceded to Canberra, and from Goulbourn into Canberra worked John VK1CJ on all four bands. Just for the heck of it, the day before on 24/9 Bob worked Ted VK2ZFS on 6 m from Big Brother near North Haven to Lismore 5 x 1 cross polarised from his ¼ wave mobile whip and 50 watts!

Summing up, Bob suggests that if there was a repeater in the Bordertown area worthwhile communications, in particular in emergencies, could be maintained throughout practically the whole of the areas of his journey.

VK5 TWO METRE PRE-AMP

There must have been a lot of amateurs around with poor 2 metre systems judging by the interest so far in the pre-amp I mentioned in the October issue. The first batch was quickly sold out and more have been ordered, and reports filtering back shows they are working well. At the price it would be difficult to do better and I have been assured there will be enough to go around. I hope to get my kit in a few days and give the unit a good try out.

HAPPENINGS IN THE UK

What is believed to be the first QSO on 432 MHz via tropo between the Canary Islands and the British Isles took place on 4th July at 1749 UTC between EA8XS and G8ZDS in Cornwall. Distance is 2613 km and 5x1 reports were exchanged. As other stations came on the distance was gradually lengthened, first to 2771 km and finally to 2787 km with a contact to GW8VHI, which looks as though this will be a new record for the British Isles.

On six metres, Dennis GJ3YHU, between 2230 on 30 June through 0100 the next morning worked forty seven North American stations in eight US states and one Canadian province. This followed the big Es opening to Iberia in the early evening of the 30th June on two metres. The maximum distance inland he worked was about 300 miles and signals varied from S1 to S9+ with many of the W's running 10 watts to a dipole antenna!

Thanks to the "VHF Bands" column of "The Shortwave Magazine" which helps to keep us abreast of what is happening in Europe. The same magazine confirms that the Anglesey beacon GB3SIX is still operating on 50.020 MHz.

AROUND THE TRAPS

Had a contact with Ron VK5ZVA at Whyalla on 144.100 on 5/10 at 5x5 both ways at 1038 UTC. Ron does not have 6 metres, but is looking to 432 as the next step . . . same date; Albany two metre beacon in, but no amateurs . . . same date, Des VK5ZO reported working through the Canberra and Shepparton repeaters Ch 7 . . . Ray VK3ATN back on VHF, worked him on two metres SSB at S2 on 18/10 and S6 the next morning. Ray is installing a rhombic for 6 metres EME and hopes to have it going before Christmas, specs are 5° elevation, GHA 145°, Declination 10 to 14° . . . VK5LP is glad to be back on the mailing list for "The West Australian VHF Group Bulletin" which has been missing from this desk for a long time. Page 4 says an up-to-date beacon list is being compiled to correct errors in some magazines listings! . . . It appears Lyle VK2ALU is still looking for a good 2C39A/7289/3CX100A type tube for their EME project. Can you help? . . . The Mount Stewart beacons ZL2VHP on 145.250 and 433.250 have been dismantled . . .

MACQUARIE ISLAND DISASTER

David VK0CK advised me tonight by radio telephone that he had been unable to keep the 21/10 20 metre sked because a sixty knot gale had demolished the amateur antennas and all would have to be rebuilt. The six metre antenna is very badly damaged, but he does hope to have it repaired in time for six metre contacts during December. That's rather bad news for all of us, but particularly for David who has to do the work repairing the destruction.

CONCLUSION

This issue starts my sixteenth year of writing these notes, and once again I thank all those good people who throughout the years have sent me information without which the writing of the column would be that much harder. Thanks also to the Editor and the editorial staff who have been very reasonable and considerate for so long.

I take this opportunity of wishing everyone the Compliments of the Season and hope 1985 will be just that much better than 1984 for you. Remember it is also Ross Hull Memorial Contest time in December and January but please do read the rules, they may have been changed! Thought for the month: *"You can get friction for nothing — harmony costs courage and self control."* 73. The Voice in the Hills.

AR

MY THREE SONS

This photograph is not an Interstate Convention.

It just happened that the three Thorogood boys arrived "home" at the same time.

The Australia Wide Network consists of from left Jim VK8NJT — Alice Springs, Jim VK5APT — OM from Yorketown, Bruce VK4BAZ — Mount Isa and Alex VK6NCH from Port Hedland.

Contributed by Jim Thorogood VK5APT.

QSP

BEWARE!!!

Two CB operators were electrocuted on 24th June, 1984 while apparently erecting a mast for a portable antenna. According to newspaper reports the 30 ft mast being erected at Hangman's Hill near Hungerford, Berkshire, contacted overhead power cables. Three other people present at the scene were treated for shock.

Quite apart from the semantic aspects of this sad incident, it is worth highlighting the obvious dangers of erecting any form of antenna near power lines — or, for that matter, any other overhead cables. A commonly-applied safety factory used in industry is "5 kV/ft": in other words, a conducting structure of any kind should, as a bare minimum be kept in excess of 2 ft from an 11 kV line. Since the voltage of overhead power lines will rarely, if ever, be known by visitors to an outdoor site, it would seem wise to aim to keep antennas as far away as practicable from them.

adapted from Rad Com — September 1984

AR

HOW'S DX

Ken McLachlan, VK3AH
Box 39, Mooroolbark, Vic 3138

NOTE: A † denotes that the address is listed in the QTH notes.

On reading magazines and newsletters from other countries combined with listening to a number of QSO's on the bands, one cannot fail to get the impression that we, as individuals, enjoy the privileges of our hobby with the minimum of restrictions.

Perhaps we are very complacent in VK but extracts from an edited letter, that was published by Bob W5KNE, in QRZ DX is worthy of repeating.

The letter comes from Father Gerry Kambites MD, an Orthodox Priest and Doctor located on Bukasa Island about 65 kilometres from Entebbe. (An article was written in July 1980, National Geographic Magazine about Gerry, his XYL Sarah, a Ugandan and their three children). The family live in a lodge which is home, medical clinic, church, storehouse, general community centre and a general zoo. Rain is collected in barrels, which saves hauling water from the lake.

Gerry trusts to be in that location for a long time to come though the world media believes that the country is in a state of civil war therefore life is a bit risky not to mention the permission he has for the use of amateur radio. With no official papers that are acceptable to the ARRL DXCC desk, Gerry originally licensed as VE7FXX, operates 5X5GK (his initials) with an FT757GX transceiver that delivers a maximum of 50 watts on twenty metres to a banana tree dipole of 24 gauge wire fed with RG58U coaxial cable and a G5RV, that misbehaves, is used on forty metres. The power for the rig and microscope is obtained from solar cells.

Gerry emphasises that UNDER no conditions should call letters or any inference to the hobby be made on the envelope also in any QSO should the country be mentioned as the whole situation is very delicate.

I, with other amateurs sympathise with Gerry for the predicament in which he is placed and it is trusted that the hobby will be accepted more readily by the different departments of the administration.

It must be pointed out that Gerry is one of many in a similar situation in various countries and this is only reprinted to acquaint readers of the hardships that some followers of the hobby do have to endure.

On a happier note Christmas has come around again and Seasons Greetings are extended from this QTH to yours with the trust that 1985 will be a peaceful, happy and prosperous year for all and that you will succeed in notching up many more DXCC countries on the different bands of your choice.

ARRL DXCC

The ARRL DX Advisory Committee voted 9-7 to recommend new country status for the Baker/Howland group following the transfer of the American Phoenix islands to the Republic of Kiribati. In their wisdom the ARRL Awards Committee voted 6-1 in favour of over-ruling this recommendation. There will be no change in the DXCC list, no deletions and no additions.

CE0AA

Not many VK enthusiasts missed out on this much wanted country that Max and Fernando actuated which was a joint venture by the Chilean Navy and the Radio Club de Chile. This rare country has only been actuated twice before, in 1965 as CE0XA and 1972 saw the operation of K9KNW/CE0X and W9IGX/CE0X. The X has been dropped for San Felix by the authorities as in line with the suffixes of their other possessions.

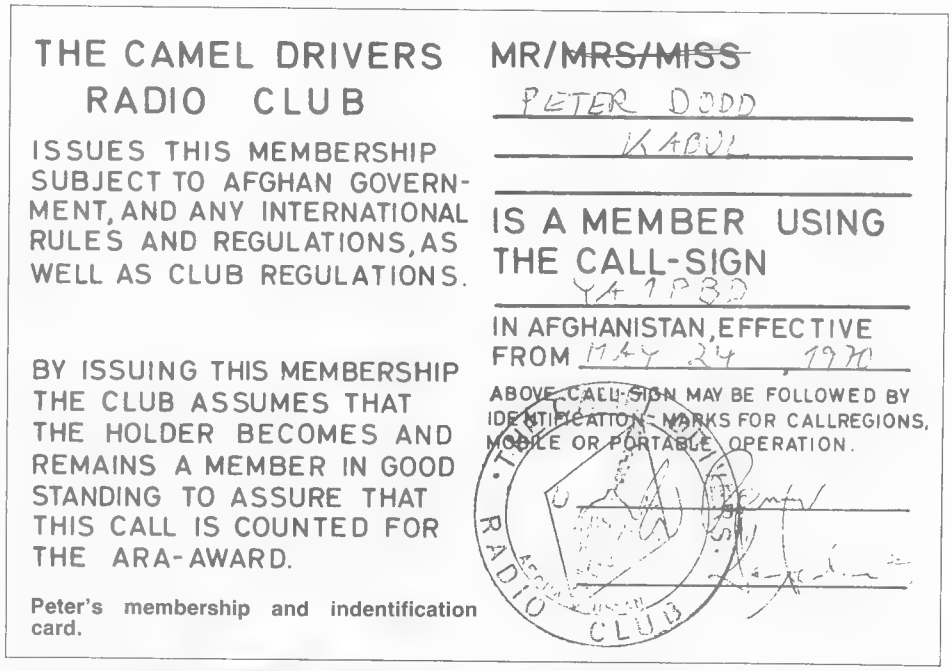
Congratulations to all concerned on an excellent DXpedition without the fuss and bother that such undertakings attract.

CDRC MEMBER IS NOW A VK

In the adaption of the article referring to the Camel Drivers Radio Club (refer p30, October AR) I had no idea that a well known VK amateur had once belonged to this group.

The amateur is none other than Peter VK3CIF, past Federal Secretary/Manager of the WIA. Peter was a member in 1970 and used the call YA1PBD, his initials. Peter used a KW2000 with a vertical that was attached to the caravan and resonant on forty through to ten metres.

Question: Are there any more ex members of the CDRC amongst our readers?



THE CAMEL DRIVERS RADIO CLUB

ISSUES THIS MEMBERSHIP SUBJECT TO AFGHAN GOVERNMENT, AND ANY INTERNATIONAL RULES AND REGULATIONS, AS WELL AS CLUB REGULATIONS.

BY ISSUING THIS MEMBERSHIP THE CLUB ASSUMES THAT THE HOLDER BECOMES AND REMAINS A MEMBER IN GOOD STANDING TO ASSURE THAT THIS CALL IS COUNTED FOR THE ARA-AWARD.

MR/~~MRS/MISS~~
PETER DODD
KABUL

IS A MEMBER USING THE CALL-SIGN
YA1PBD
IN AFGHANISTAN, EFFECTIVE FROM MAY 24, 1970

ABOVE CALL-SIGN MAY BE FOLLOWED BY IDENTIFICATION MARKS FOR CALLREGIONS, MOBILE OR PORTABLE OPERATION.

RADIO CLUB

Peter's membership and indentification card.

Peter VK3CIF, GD3PBD and ex VQ4, 5, and 1PBD, G3PBD, 5H3PBD, ZD6PBD, 9J2PBD, OE1ZBW, YA1PBD and ZL1BDC to mention but a few of the calls this gentleman has used during his extensive travels.

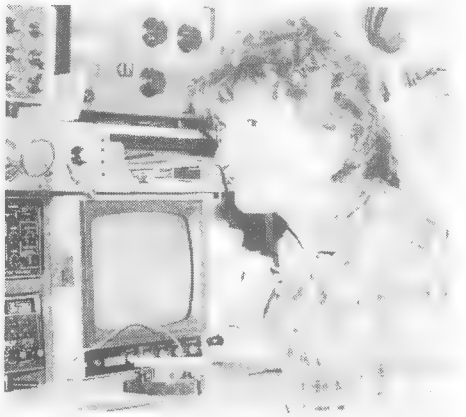
A YL ON MACQUARIE ISLAND

Denise, who had her first introduction to amateur radio whilst acting as a weather observer on Willis Island (Refer p34, September AR) earlier this year is now on the sub-Antarctic territory of Macquarie Island. She has the honour of being the first YL amateur to operate from this area and will be using the call VK0YL.

Denise, after leaving Willis Island, did extensive preparation training in the rugged parts of Tasmania and a two week stint at the Royal Hobart Hospital where she did a "crash" course in training as a theatre nurse which she will double with her profession as a weather observer if unfortunately the need arises in her twelve month stay on the island.

Denise has gone equipped with a TS 120S and power supply and will be operational on all bands including six metres as times from her duties permit. Lionel VK3NM, the owner of the six metre equipment presently on Macquarie Island, which consists of a FT680, Lunar amplifier and power supplies, has kindly extended the loan until her return at the end of next year. The Werner Wulf four element beam is still in operation and Gil VK3AUI kindly arranged a VK0YL EPROM for the keyer.

QSL arrangements are via VK3AH direct as per the Call Book address or via the Bureau and the card turn around period is dependent on the receipt of logs by radio when duties and propagation conditions allow.



Denise keeping in practice with the "key".

LESOTHO

Len 7P8CL (SM5KDM), is active again after holidays from his work with the United Nations in

Maseru. Len hopes to be active until at least the end of March 1985 on all bands with SSB and RTTY.

Len's station consists of an IC751 driving an L4B into a TH5DXX with dipoles for the low bands. Being the first station in that country on RTTY he is anxious to make scheds and interested enthusiasts are invited to write to him to make arrangements. The address is Len Hognert, PO Box 301, Maseru 100, Lesotho.

PETER 1 ISLAND???

A group of JA operators claim to have permission and the necessary documentation, including the call 3Y0AA, to operate from 1st January to the 1st March, 1985 and the same period in 1986. The group have made the claim but Norwegian authorities are very keen to have a national operate the new country for the first time. It will be a case of wait and see!

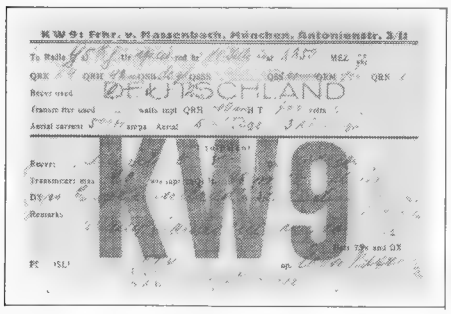
RTTY ENTHUSIASTS

The following stations are known to be active on RTTY. Abdul A4XJW† is running two kilowatts into a TH6 and is active on Fridays from 1600 UTC on twenty metres. Steve VQ9DX† has been active on 14.083 MHz after 1600 UTC. 5B4NG† is active between 14.088-14.096 MHz from 1730 UTC most days using a 850 Hz shift. Jean-Louis TR8JLD† is operational from 1800 UTC between 14.080-14.085 MHz. 9H1EY on 14.097 MHz around 1600 UTC, 9H4C on Gozo Island on 14.080 MHz at 1800 and BY5RA can be worked on 14.081 MHz at 0800 UTC.

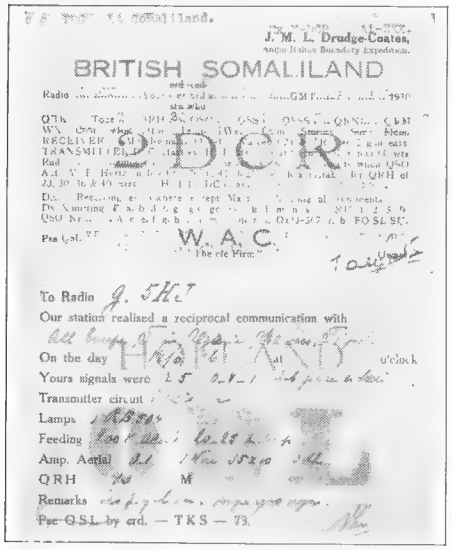
All you RTTY enthusiasts go to it and any reports would be appreciated.

CARDS OF YESTERYEAR

Norman VK4BHJ ex G5HJ has forwarded some cards of interest. The KW9 card is for a contact on the 14th June 1926 and the date is stamped on the back with the time of the QSO being depicted by two clocks, one showing the hours in Roman numerals the other is divided into sixty to denote the minutes. Incidently the time was 8.48, am or pm unknown.



The two other cards are 0BL from Holland on the 12th June 1926 and 2DCR from British Somaliland on the 13th April 1930. This card, it is imagined, would be quite a rarity.



MOUNT ATHOS

Yet another amateur has been refused a licence to operate from the monastry. This time it was SV1SQ!

According to the highly rated current affairs programme 60 MINUTES seen throughout Australia, this monastry which dates back nearly 1000 years boasts that there have been no females allowed within the precincts. Even the animals are all male, there being no hens, eggs are "imported" so it is going to be an impossibility to work a legitimate YL operator signing SV---/A.

The Australian reporter, George Negus, would not have had a hope of smuggling in their lady reporter on this assignment but he did manage to speak with an Australian monk from Brisbane who has resided in the monastry for three years. In all it was a very interesting programme and it shed a lot of light on their reluctance to issue permission to amateurs to operate from their sanctuary, particularly after the behaviour of a DX group a number of years ago.

TAIWAN

The multi-coloured cards for the DX Family Foundations Dxpedition to BV should be in your letter box by now. If you did not work this expedition or Sylvie BV0YL for a new YL country, you have certainly missed out on a special high quality card which has become typical of the Foundation.

Sylvie BV0YL and the OM Mike BV0JA.

IRC's

International Reply Coupons have become virtually unobtainable in Poland. There are a mounting number of countries where the amateur population has no access to this form of repayment and it appears that they will have to resort to the long wait and trust that their fellow amateur will QSL via the Bureaux.

OVERSEAS JAUNT

Lionel VK3NM will be operating ZL1SW, his own call from the 22nd of this month until the 19th of January, then on the way home it is via Norfolk Island where he will sign VK3NM/VK9N for one week prior to dropping in on Lord Howe Island to add /VK9L to his call from the 26th January to the 3rd of February. Six metres will of course be on the menu and Lionel will be watching for openings.

TRINDADE ISLAND

PY1BVY hopes to operate from Trindade possibly this month. Details are sketchy but it will be a CW and SSB operation if it comes to fruition. For those that need it, keep listening and good luck!

BITS AND PIECES

Cic 9A1C, a YL, is quite active on CW around 14.015 MHz. ★★★★ VR6TC and VR6KY quite active on SSB below 14.190 MHz. ★★★★ The operation of DJ5CQ/SV/A is still under a cloud. ★★★★ VK0PB† and alternatively AX0PB†, the call of "Project Blizzard" should be heard quite frequently during their trip south, whilst there and during their return on the Dick Smith "Explorer". ★★★★ 5U7LD cards not acceptable to the ARRL DXCC desk at the present, as no paperwork has been received. ★★★★ TN8EE cards from July 1983 are now good for DXCC. ★★★★ BY1PK now active on RTTY. The equipment was provided by JA1BPK. ★★★★ A special card was struck for ZV2AA which was used to celebrate the 50th anniversary of the University of San Paulo. ★★★★ TR8DM is QRV on 20 metres CW. ★★★★ HC1A was operational by the Quito Radio Club for the CQWW Contest ★★★★ VE0MAR (0 being reserved for mobile stations) was located near the Canadian Arctic, QSL to VE2FOU. ★★★★ WB4BSJ/KL7 is located on one of the Pribilof group of islands. ★★★★ 7SK7HW was for real, it was a special event station from Sweden. ★★★★ ZB2HT† has been quite active on twenty metres. ★★★★ Mustafa TA1MN quite active on twenty metres using CW. ★★★★ A new call from the Seychelles is Clive S79CW†. Clive is using an IC751 and a TA33. ★★★★ Waiting for a card from 5W5EE from the 1982 CQWW Contest? Have patience, George has just received a large batch from the Western Samoa bureau and will commence processing them.

REPORTS REQUESTED

The 100 mW beacon signing VE3DPB on 7.033 MHz is QRV around the clock. Reception reports are sought and would be appreciated by VE3FXT.

MAMMOTH CW QSO

On the 25th July 1931 Austine VK3YL and Geoff VK5ML commenced a CW QSO at 1300 CST and completed it at 1920 CST. At the time it was accepted as a record.

Is it still a record? If any reader has verification of a period in excess of this QSO on either CW or SSB, the details and a copy of the verification would be appreciated for this column as it is thought that it would be of interest to many readers.

SPECIAL VE PREFIXES

From the middle of October a number of XN1-8 prefixes replacing VE1-8 have been appearing on the bands. These prefixes have been issued to commemorate the centennial of the Greenwich meridian and standard time signals which were attributed to Sir Stanford Fleming, a Canadian. These prefixes will continue until 2400 UTC on the 13th of this month. Other prefixes of XO1 and XL1-2 belong to VY1 and VO1-2 stations respectively. QSL to the appropriate V* holder of the suffix.

GUEST WRITER

Ivor VK3XB, well known for his prowess with the "key" has kindly written a precis of DXing, as he has seen it change over the years, for this column in the next issue. Don't miss this segment of the column which I am sure will appeal to all readers.

THANKS

Sincere thanks go to the following. The Editors of weekly, bi-weekly and monthly newsletters including the ARRL NEWSLETTER, PHILIPPINES RADIO RELAY LEAGUE — QSP, RSGB DX NEWS, QRZ DX, LONG SKIP, DX FAMILY FOUNDATION NEWSLETTER, BOTSWANA AMATEUR RADIO SOCIETY NEWSLINE, JAN and JAY O'BRIEN'S QSL MANAGER LIST, KH6BZF REPORTS. Magazines including CQ, cqDX, QST, RADCOM, JARL NEWS, KARL NEWS, OZ, JARL NEWS, WORLD RADIO, 73, BREAK IN and VERON.

Members who have contributed include VKs 2PS, EBX, 3BY, FR, YJ, YL, CIF, 4BHJ, 6NE, 9ZA and G3NBC. Overseas amateurs include G1EOD, I8SAT, and ZL1AMM. This brings down the curtain on yet another year and thanks are extended to one and all who have participated and made the column possible during 1984. Very happy Seasons Greetings to all.

QTH INFORMATION THAT YOU MAY NEED

5B4NG	PO Box 1492, Nicosia.
5N1ARY	PMB 5184, Ibadan, Nigeria.
5N3LED	PO Box 58, Ondo, Nigeria.
5Z4EXP	PO Box 14829, Nairobi.
7Q7LW	PO Box 24, Mtakataka, Malawi.
8R1J	PO Box 10767, Georgetown, Guyana.
9K2DZ	PO Box 1262, Kuwait.
9X5BJ	PO Box 626, Kigali, Rwanda.
AX0PB	VK6NE, 2 Moss Crt, Kingsley, WA, 6026
C21RK	PO Box 139, Nauru, South Pacific.
CE0AA	PO Box 700, Santiago, Chile.
CN8MC	PO Box 299, Rabat, Morocco.
EL2FP	PO Box 98, Monrovia.
GU3KFT	PO Box 100, Guernsey Island.
H44IA	PO Box 19, Honiara
J28CI	PO Box 98, Djibouti.
J28EB	PO Box 2417, Djibouti.
J88AN	PO Box 103, Kingstown, St Vincent.
JT1AO	PO Box 844-2, Ulan-Bator, Mongolia.
KC6JA	PO Box 781, Moen, Truk, East Carolines 96942.
OX3GU	PO Box 1227, Dundaz, 3970, Greenland.
PZ1DT	PO Box 2163, Paramaribo, Surinam.
TA1MN*	Mustafa, PO Box 33, Istanbul, Turkey.
T2ADE	PO Box 5, Funafuti, Tuvalu.
T32AN	PO Box 493, Tarawa, Kirabati.
TR8DM	PO Box 268, Moanda, Gabon.
TR8JLD	PO Box 484, Libreville.
V44KA	PO Box 2, St Kitts.
V85HG	PO Box 222, BSB, Brunei.
VK0PB	VK6NE, 2 Moss Crt, Kingsley, WA 6026.
VQ9DX	S Brown, VP-19 WC 660 AIMD, FPO San Francisco
YN5RR	PO Box 122, Jinotepe, Nicaragua
ZD7AO	PO Box 25M St Helena.

*NOTE: *Please NO mention of the hobby on the envelope.*

QSL MANAGERS

3A4E:F9RM, 3D2FB:WB6GFJ, 3D2FR:NE4S, 3D6AJ:WB3CQN, 4K1GAG·UQ2OC, 5H3BH SM0EAI, 5T5RD:F6IIA, 8R1AW:W7AW, 9G1CI:LA4O, 9M6VW:KO2A, 9X5VL:ON4AR, 9X5WP WB6VKD, 9Y4NP:W3HNK, A22CA:AK1E, A22ME:AK1E, A22/ZS6BUX:ZS6BUX, A4XJW:N4WVF, A92EB K0LST, AD8J/KP2:AD8J, AX0PB:VK6NE, BV0W:W4WJ, C53AL:KA2CDE, C6A/DJ0SB:DJ0SB, CE3DNP:WB6WOD, CN8CX:HB9AGH, CO2HQ:WB6QPG, CO2KK:KE5KK, CO2PY:XE1XF, CT2CB:N2DUR, CT2EV·WA3HUP, DF4RD/SV9:DF2RG, ED2EEE(CW):EA2MU, ED2EEE(SSB) EA2AJT, ED3RCD:EA2CUO, ED7SVA·EA7GI, EK1AB:UZ3DD, FB8WJ:W4FRU, FO8KP·F6GXB, GD4XCY/A:G4XCY, HB0NL:HB9NL, HS4AMS:W7PHO, J28DX:F1CFD, J5WAD:UA4PW, J73AB:KF4UP, KC6HA:K6EDV, KP4AM·W7PHO, KR4C/PJ7:KR4C, K9GL/VP2V:K9GL, SV0AC/SV9:WB4GCP, T30AT:G4GED, TL8GE/ST0·F6FYD, TT8RP:F6KGU, TZ6FIC:F6CRS, VI3WI:VK3WI, VK0PB:VK6NE, VK0YL:VK3AH, VK9MR:VK2WU, XX9DX:VS6DX, ZD7CW:N4CID.

WORKED ON THE EAST COAST

160 METRES
VE1ZZ‡, ZL4DX.

80 METRES
W4FX‡, ZL70Y.

40 METRES
5W1EJ, C21FS, JA7YAB, W9LOF‡, WA2SON‡.

20 METRES
3A2EE, 3D2MO, 3X4EX, 4S7NMR, 4X4BS, 4X4OX, 5B4GZ, 5N3RTF, 5W1EJ, 7X2CR, 9M2PM, 9M2PW, 9V1TL, 9V1WC, A35SA, AP2AU, AP2MQ, AP2PU, BV0W, BY5RA, C21RK, CE0AA, CP5LK, F0AHY/FC, F8PX, FB8YK, FW8AF, G3NBC, G4CSF, GB2SM, GB2FAS, GD4XCY/A, GM3VM, GM3AWW, GU4XEA, GW3IVR, GW3NNF, HA5HR, HA5KFL‡, HA9RE, HA8KBE‡ HB0NL‡, HB9ADD, HC2AIR, HG5A, HG19HB, HI8LC, HK8BUN, HP1XXO, HR1FC, HZ1AB, IS0QDU, KC7XD, LA2TO, LA9TCA, LX1BI, LX1FJ, LZ2KRM, LZ40KTS, OA4AYY, OD5QS, OE5BGL, OE6JGG, OK2SAI, ON7UQ, OZ1JPU, P29ZL, PP8JJ, PT2VE‡, RV0AA, RZ9UZF, SP4DC, SP4JWR‡, SP8JRQ, SP9CEM‡, SV1DO, SV1OL, SV1SQ, SV8CS, T2ADE, TG9AL, TI2CRM, TI8CR, TI8CBT, TR8CR, UP1BWW, UQ2GP, UZ9XXM, V85ES, VO1AW‡, VP2M, VU2AU, VU2NAJ, VU2SUN, VY1CW, XE1AJY, XU1SS, Y63TI, YO7AVX‡ YV4DKE, ZS1OU, ZS2U‡.

15 METRES
3D2MP, HL1APR, HL4GAH.

10 METRES
5W1EJ, JA7YFB, RA9CQW, UA0DAK, WB7FDQ.

‡ denotes CW operation.

INTERESTING QSL's RECEIVED

3D2DX, CT3BM, HH2CQ, HL9RC, KC6SX, SV2RM, T2ADE, VE7BBC/KH8, W7TJ (160 Metres), YO2BLO.

Bill Blitheringtwit — the Formidable!

Ted Holmes VK3DEH
20 Edmunds Street, Parkdale, Vic. 3195

BILL AND THE SECRET

Bill wandered slowly down High Street, gazing into shop windows. He was a few paces behind his wife on their usual weekly shopping outing, gathering in the regular supply of groceries, vegetables and the like. Every week Bill was obliged to drive his wife to the shopping centre and trail around with her, pushing a trolley, collecting the goods and faithfully trundling them back to the car and loading them into the boot for transportation homewards. He had done this for so many years that it had become a way of life. His wife had remarked some time before (rather unkindly he thought) that it was about the only thing she could trust him to do without him making a mess of it. At the same time she pointed out that this was no doubt due to the fact that she was with him at all times.

However, there was one thing Bill's wife had failed to take into account. In High Street there had recently opened a brand spanking new radio supply shop and in the window were many tempting things on display. Such succulent items as SWR meters, tuners, knobs and switches and — best of all — a very smart looking power supply.

Ever since Bill's last effort with his home-brew power supply things hadn't been at all good at home. For one thing, he hadn't been able to get on air and irritate all and sundry. No fuses had blown for at least a fortnight and his wife was actually beginning to get used to the luxury of a domestic electrical system which didn't every now and then plunge her into darkness. Things could get definitely nasty if they were allowed to continue and Bill could foresee the time when he would be doomed to staring at the TV night after night. The thought was too horrible to contemplate!

He had to do something about getting himself a power supply and get back into action again. At the same time he hated the very idea of BUYING a supply. Great heavens! the things were not hard to build. All the same, it was easier to buy himself a new, tried and tested unit and if it didn't work he could always take it back.

The problem was how to sneak it into the house and into the shack without his wife knowing anything about it. Unfortunately, Bill was not blessed with that pearl among women — a wife who encouraged him in his hobby. If he spent any money on it she pointed out that it should have been spent on a new lawn mower, or a new bed or something else of a domestic nature. To her Amateur Radio was a totally useless waste of time and everything else. Quite a few wives tend to be like that, as Bill very well knew, having heard over-the-air comments in this respect frequently.

A diabolical plan rapidly shaped in his mind. At one stage his wife visited the hairdresser's for a shampoo and set and whilst she was there he could visit the Radio Shop, buy the supply and stow it beneath the shopping. Then he could load it into the boot with the other stuff, unload it at home later and spirit the supply into the shack, where he could set it up and she would be none the wiser. It all seemed pretty foolproof.

At the appropriate time they came to the hairdresser's and Bill was able to wander off with the trolley, ostensibly to load the things into the boot. Instead he headed straight for the shop. There was a temporary setback whilst he struggled the trolley (damned thing!) through the doorway but, apart from causing a display stand to tremble a bit, he came to no harm. He nearly had apoplexy when told the price of the supply but he had come too far — he paid up. He then left the shop and found himself a quiet spot to examine his treasure. Being Japanese, the thing was well packed. Fibre carton, polystyrene, plastic, etc. He wrenched away at the wrappings, cursing.

Suddenly the carton split apart and the heavy supply slid, slowly it seemed, striking the concrete paving with a solid thud. One end dented in and a knob broken off. The voltmeter cover cracked. Terminal posts bent and some plastic covers fell apart.

Bill stood aghast. Just for a moment he was tempted to take it back, but even he didn't have the nerve to do that! **AR**

AMATEUR LICENSING IN USA

NOVICE CLASS

This is the typical beginning license. The applicant must pass a 5 WPM International Morse Code test and then pass a twenty question written test on basic theory and rules from a properly licensed examiner. The Novice licensee can only transmit in Morse code on the designated HF Novice Class bands

TECHNICIAN CLASS

This license gives the holder Novice Class privileges on the HF bands and full amateur privileges above 30 MHz. The exam for the Technician consists of a seventy question written test and a five WPM code test unless the applicant has already passed a Novice exam, in which case he/she doesn't have to retake the code test or the twenty Novice Class written questions. The 'Tech' license gives voice, television (fast- or slow- scan), radioteletype (RTTY), and facsimile privileges It even lets one communicate via the amateur satellites that orbit the Earth!

GENERAL CLASS

The General ticket gives full amateur privileges above 30 MHz (just like the Tech ticket) but also give voice, RTTY, slow-scan television (SSTV), and fascimile privileges on the HF bands. One is also given additional frequencies for code. To get a General Class ticket, one must pass a thirteen WPM code test and the seventy question written exam mentioned in the previous discussion about the Tech license.

ADVANCED CLASS

This license gives additional HF privileges for voice, etc. If you presently hold a General Class license, you need only take and pass an additional fifty question written exam

EXTRA CLASS

This is the highest level of license that the FCC currently has for amateur radio operators. This gives all possible privileges and (if one presently holds an Advanced Class license) requires first passing a twenty WPM code test and then pass a forty question written test. All of the above licenses are valid for ten years and are renewable.

from CQ — August 1984
AR

GUEST LICENCES

To September 1984 the Department of Post and Telegraphs in South Africa have issued 155 guest licences to visiting amateurs from fourteen countries. Of these, Australians have had six and New Zealanders, one.

from Radio ZS — September 1984
AR

NEW MEMBERS TO IARU — Region 3

During September three new member societies were admitted to the International Amateur Radio Union.

The societies are Vanuatu Amateur Radio Society, ORARI of the Republic of Indonesia and the Chinese Radio Sport Association.

As a result of these new members the membership of IARU now totals twenty two in Region 3.

AR

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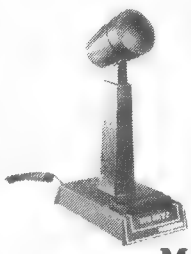

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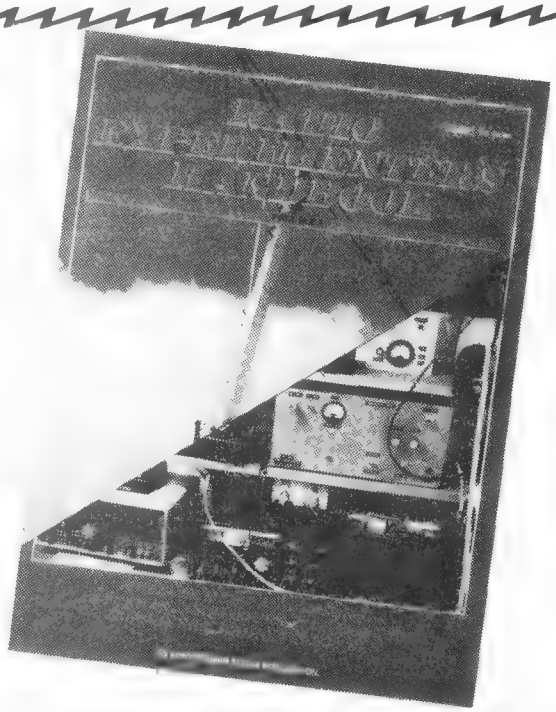
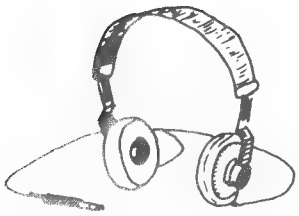


eti

Edited by Roger Harrison, VK2ZTB, this book carries a wealth of practical, down-to-earth information useful to anyone interested in the art and science of radio. $7.95 from your newsagent or through selected electronics suppliers. It is also available by mail order through **ETI Book Sales, P.O. Box 227, Waterloo NSW 2017** (please add $1.75 post and handling when ordering by mail).



LISTENING AROUND

Joe Baker, VK2BJX
Box 2121, Mildura, Vic 3500

Even now in October as I write this column, the cold wintery blast has returned — and it seems like winter just doesn't want to go away. To help pass this dreary day, I'll relate something about my days in the Northern Territory where I was an Army Sig in World War Two. By way of contrast to the weather here, our main complaint up there was against the high humidity, the heat, the anopheles mosquitoes and all the other bugs that bothered us.

Six hundred of us were sent to the NT in one massive convoy that took us by train from Sydney, Melbourne, Adelaide, Terowie, Alice Springs then by articulated vehicles (they were American semi-trailers and the first that I had ever seen in Australia), to Birdum (Larrimah) and from there on a rickety old train to Adelaide River. From Adelaide River, some of us went to the 67 Mile Post near Coomalie Strip, but it's about my soujourn at Pine Creek that I want to write now.

Pine Creek is located about 200 miles south of Darwin, between Adelaide River and Katherine. The Signal Office here was a sturdily constructed corrugated iron building, that had been a former Mission Station, and alongside it was the Court House and Police Station. About half a mile from the Signal Office was the RTOs office (the civilian equivalent means Railway Station). Converging on the Signal Office from both north and south was a vast network of telegraph and telephone wires that were part of the Overland Telegraph, connecting Darwin with Alice Springs and Adelaide.

There were about a dozen sigs there, linesmen to repair wires brought down by storms, a couple of sounder operators, a cook, and other including a few, like me, to man a thirty line "UC" board. Besides the trunk lines to the north and south, there were local lines to the army canteen, the RTOs office, Area HQ, the RAAF, McDonald Strip, and the Police Station to name but a few.

We lived a very crowded existence at the Signal Office, and beds — army stretchers with straw palliases and green mosquito nets — were located anywhere there was space.

One day I asked our corporal why we didn't use the room behind the switchboard. He said "*You'll find out when you've experienced your first really big electrical storm.*" Now these Northern Territory storms are not just like the little ones we have here in the south, which last 15 minutes and are gone like a puff of wind. Just like in Texas, they do things really big in the NT, and in the right season, a Territory storm can occur about five days out of the seven, beginning at about 3pm and lasting about three or four hours, with everything let loose including fireballs and torrential rain. They can be very frightening especially when your not used to them.

Soon after I took up duty at Pine Creek, I realised the full potential (no pun on that word!) of such a storm, and the reason why that little room at the back of the switchboard remained uninhabited. The UC switchboard was of the type that have all the patch-cords sitting upright in front of the operator, and lightning that was picked up along the long lines from north and south converging on Pine Creek, *would arc across the plugs*. In the room at the back, the gaseous arrestors, high up on the wall would go off like an atom bomb and fly right across the room.

The lightning could play other tricks too — like dropping the shutters on the switchboard. I remember the first time when I was on and the shutter dropped as if Katherine was calling. I answered but there was nobody there. I called Katherine back and asked why they were calling me then wouldn't answer. I was told to pull my head in — which I did from that day onwards.

Being in an area that was still classed as being "On Active Service" and as the troops got only about six shillings a day, servicemen were allowed to ring their friends "Down South" at very much reduced rates by night. The result was that on such nights, a collection of all who wanted such calls, would be required to camp overnight at our signal office, many of them sleeping on the concrete floor. If I was on the night shift, my bed would be in front of the switchboard with the night alarm turned on. All calls had to be booked many hours ahead and female operators in Adelaide timed the calls and alerted me when each was due.

One particular night an RAAF officer approached me and asked could he have some extra time as there was some domestic matter that he had to deal with and wanted to speak with his wife. I told him that it wasn't me who timed the calls but we worked out a plan. I told him that when his call came through, I would put him in the phone box outside, and suggested that he "chat up" the female operator in Adelaide to see what would happen. So well did he sweeten her up, that the Adelaide operator instead of giving him about the regulation "three minutes only" gave him a full half hour or so.

At that time in the NT, not all of the phone calls went via PMG lines. The army had quite a network of field telephone lines in use, and on these they used mainly Don Five telephones and Freddiephones. Only yesterday, at the home of a Mildura amateur, after forty years — I saw one Don Five telephone and one Freddiephone in perfectly preserved condition. The Don Five was exactly as I remembered them, except that the one I saw did not have the square cells which the originals were fitted with.

Up in Sydney, VK2KAA and VK2KAT have gathered much information for me about Marconi's first wireless messages to Australia in 1918 — together with photographs, and all of this material, which I am sure will be of interest to many, was sent to me a very long time ago. Recently when I was speaking with Arthur VK2KAT of Balmain, I apologised for not having yet put all the material together. Anyway, when I get stuck into it I'll make up for lost time.

In one of my last articles I mentioned my intention to get to know something about computers. Soon after that, I obtained a TRS80-MC10, and some time later a Commodore 64. I feel that I have much to learn about computers even at the age of 67, but electronics is an on-going science and as long as I'm able to think, I don't want to grow stale. I have accepted the challenge to try to know more, and that's just exactly what I'll be doing.

Thanks to all who repeatedly on air say that they enjoy reading this column — their remarks are most encouraging.

73 and best wishes to all for the Christmas season.

AR

INTRUDER WATCH

Bill Martin, VK2EBM
FEDERAL INTRUDER WATCH CO-ORDINATOR
33 Somerville Road, Hornsby Heights, NSW 2077

Being somewhat of an amateur statistician (no pun intended), I find it convenient and efficient to keep tabs on all my paper-work relating to the Intruder Watch. If someone requests information on such-and-such an aspect, it is satisfying to be able to pull the information out of the files immediately, and not have to resort to the Biblical system of filing ie. *'Seek and Ye shall Find'*.

Answering a recent request from Jim Linton VK3PC, VK3 Divisional President, brought to light some facts which I thought would be interesting to pass on to readers of AR

Since being appointed WIA Federal Intruder Watch Co-ordinator in July 1982, I have kept records of intruder activity, etc, in the interests of efficiency and to try and avoid the frustration that comes with not being able to put ones finger on any given information at will. Since July 1982, a total of 269 DIFFERENT intruders have been registered in my records. That is, intrusions from 269 different sources. Countries from which these intrusions come include:

***Albania**, Australia, Bangadesh, **China**, East Germany, England, Estonia, Finland, France, Greece, **Indonesia**, Iran, Korea, Lebanon, Pakistan, Philippines, **USSR**, and **Vietnam**.*

These, of course, are in alphabetical order, and not in order of nuisance value. Surprising to find Australia in the list. But this one has been fixed up, I think (hope). The countries emphasised are the sources of the greatest intrusions, and transgress daily.

USSR and China are by far the leaders in the intruder stakes. Information has come to hand that Australia has established diplomatic relations with Albania — *does this mean that they may now listen to our complaints of intrusions by Radio Tirana?* We'll see . . .

On a new note: enquiries received from the ARRL Intruder Watch (now designated Amateur Interference Reporting System — AIRS) tells me that they are casting suspicious glances at AMTOR activity on or about 14.074 MHz, with a view to establishing if the stations concerned are amateur or commercial.

Syd VK2SG, who is a pioneer of the AMTOR mode in VK tells me that he is not aware of any commerical 'TOR' activity on or about that frequency. Any reader having information to the contrary could please let me know, so I can pass that on to all concerned.

During the writing of this months column, very sad news has come to me that Hugh Spence VK6FS, passed away on the 19th September 1984.

Hugh was an old-timer, a very active amateur, Federal Awards Manager, and a very staunch supporter of, and observer for, the Intruder Watch. We shall miss Hugh's presence and assistance, and extend our sympathies to his family.

1984 has seen a year of sustained support for the Intruder Watch, and many thanks go to those who continued their support. Let's keep up the attack in the new year. I now wish all readers the compliments of the season, and, if you are one of the lucky ones on holidays, hope you get plenty of good DX. See you in 1985.

AR

Send an Intruder Watch Report today. IW needs your help to protect the amateur bands.

ALARA

Australian Ladies Amateur Radio Association

Margaret Loft, VK3DML
28 Lawrence Street, Castlemaine, Vic 3450

Well our first ALARA get together was a lovely weekend with twenty four members from six states attending. A very special thank you to Marilyn VK3DMS, Geoff VK3ACZ, Marlene VK2KFQ and Ron VK2EFJ for all your work to make the weekend such a success. Fifty attended in all.

Thanks also to the members of the Mildura ARC for your help in catering and for attending our functions.

On arrival at the hall each YL was presented with a spray made by Mrs Perry (Ron's mum) a lovely start to the weekend. Poppy VK6YF had bookmarks with WA wildflowers on them; Carol VK5PWA, who was unable to attend, sent along souvenir hankerchiefs with ALARA 1984 and her callsign. Thank you all for your thoughtfulness.

A sheaf of flowers was presented to our foundation president Norma VK2DJO by Marilyn on behalf of all ALARA members. In nine years ALARA has achieved a lot and all thanks to Norma who felt more YLs should be involved in radio.

I had the pleasure of unveiling the very impressive Mrs McKenzie Memorial CW Trophy, a suitable home will be found for this in the near future when we have the certificates printed. One suggestion was the Museum in Melbourne where the VK3 WIA broadcasts originate from. This would be a good central location and hopefully be seen by many visitors to the amateur station operated from there.

A barbecue lunch was enjoyed by all as we tried to match the face to well known voices; most had been seen in photos but it was a little difficult to associate some of the girls with the voice.

Saturday evening all enjoyed a lecture by Geoff on dried fruits and the running of a vineyard; a casserole tea was provided by members of MARC and we all wandered from room to room sampling the goodies and chatting to everyone. A lovely decorated cake was admired by all, congratulations Jessie.

Joy VK2EBX composed a song for the occasion and this was sung by all in the lounge, Marlene taped it so maybe one day we will make the top forty!!

A presentation of a red velvet bag of "gold coins" was presented to Marilyn from all those present in grateful appreciation of all her work in organising the whole weekend.

Sunday morning dawned wet and cold so a quick change of venue for the barbecue, then off in convoy to Lock 10 followed by morning tea at Marlene and Ron's QTH, then off to the PS Loyalty for a two hour cruise on the Darling River.

An interesting commentary on the history of the area and also the birdlife. The cameras were very busy all weekend and we are planning to photocopy a little booklet of photos early next year. If you would like a copy please contact an ALARA member for details.

After lunch members started to leave, first off was Norma and party who flew out in their chartered plane.

Current discussion is where and when will the next one be.

NEW MEMBERS AND CALLSIGNS

Welcome to new members:

Jean Truebridge (rejoined), Nanako JI1VLV — 8.7.84, Marilyn ZL2BOA — 16.9.84, Fumi JA1AEQ — 21.9.84 and Jill VK4VNK — 8.10.84.

Callsign changes:

Meg VK5NOE now 5AOV, Margaret VK3NZD now 3KCP and, Anne VK4JAB now 4FAB.

ALARA CONTEST

Thank you to all who participated in our contest last month, hope you found it enjoyable and PLEASE SEND ME IN YOUR LOGS BY 31st December so you can be eligible for a certificate. NOVICE YLs don't forget to MARK IN RED or in some way indicate your score on CW for the Mrs McKenzie section of the contest.

SUBS DUE

Girls remember your subs are now due again $5 for VK members and also for DX sponsorships with newsletter going airmail: $3 DX seamail.

OMs are welcome to join ALARA as subscribers or as a couple of the OM's have done to sponsor a YL from overseas into ALARA. Please write to the treasurer Valda VK3DVT, PO Box 4, Middle Brighton Vic 3186 for any enquiries.

Also available for a Christmas present to your YL are teaspoons $4.50, badges and charms suitable for chain or key ring $4 each (p & p included). All show the ALARA logo. Perhaps membership to ALARA would get your YL interested in your hobby too.

As another year draws to a close I would like to thank all for your continued help and support c ALARA, we now have close to 200 members and perhaps we could make our wish for ALARA for next year that "we thrive in '85".

Season's greetings to one and all

33/73/88 Margaret VK3DML

AR

ADVANCED ELECTRONIC APPLICATIONS

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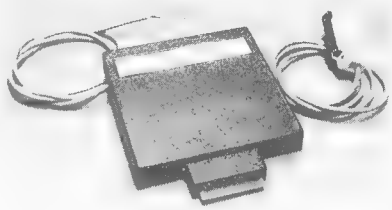

The MAP-64/2 (up-rated version of MAP-64) represents the most complete MORSE, BAUDOT, ASCII and AMTOR package on the market today. The MAP-64/2 is the superb marriage of MBA-TOR software with the outstanding Micropatch hardware. Written for the COMMODORE-64 the MAP-64/2 offers virtually all the features of other available packages – including Amtor. It offers Auto Response (mail drop), Auto Beacon and Auto Call (message forwarding). In addition you can, in any mode, imbed a "CONTROL X" character at any point within the 10 soft-positioned message buffers or type ahead buffer. During a QSO the call of the station you are working can be substituted for the "CONTROL X" character. Ability to receive data in one mode and re-transmit it after editing in another mode without first storing to disk or cassette.

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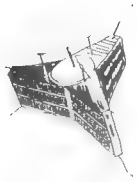


AMSAT AUSTRALIA

Colin Hurst VK5HI
8 Arndell Road, Salisbury Park SA 5109

NATIONAL CO-ORDINATOR
Graham Ratcliff VK5AGR
INFORMATION NETS
AMSAT AUSTRALIA
Control: VK5AGR
Amateur Checkin: 0945 UTC Sunday
Bulletin Commences: 1000 UTC
Winter: 3.680 MHz Summer: 7.064 MHz
AMSAT PACIFIC
Control. JA1ANG
1100 UTC Sunday
14.305 MHz
AMSAT SW PACIFIC
Control: W6CG
2200 UTC Saturday
21.280/28.878 MHz

Participating stations and listeners are able to obtain basic orbital data including Keplerian elements from the AMSAT Australia net. This information is also included in some WIA Divisional Broadcasts.

ACKNOWLEDGEMENTS

Contributions this month are from Bob VK3ZBB, AMSAT-Telemail and UOSAT Bulletin Number 97, 19th November 1984

UOSAT-OSCAR-9 THIRD BIRTHDAY MISSION SUMMARY

UO-9 was launched at 1127UTC on 6th October 1981 from Vandenberg AFB, California into a 554 km sun-synchronous polar earth orbit. A great deal has happened since that day, both on the spacecraft and on the ground UO-9 took a little while to 'tame' — the difficult command links caused the commissioning phase to stretch longer than anticipated and gave rise to the well-remembered months of 'steady tone' whilst UoS and SRI fought to regain use of the spacecraft Those months (5) were put to good use upgrading the ground station and, following the successful recovery of the spacecraft, great strides were made with the activation of the on-board experiments and particularly navigation and attitude control The complex and difficult despin and attitude manoeuvres culminated in temporary gravity-gradient stabilisation, however the magnetometer cables on the boom became tangled during deployment and the boom had to be retracted. The spacecraft was then spin stabilised and the remaining experiments activated. A weekly schedule of daily experiments have been executed for the last two years including weekly news Bulletin Service, CCD image Data, Radiation Experiment data, computer-generated telemetry, DIGITALKER and whole-orbit telemetry surveys. The Bulletin service has been especially successful for maintaining the user community in close contact with spacecraft operations, future mission proposals and more general space news The DIGITALKER experiment has had a profound impact in schools and colleges worldwide due to its vivid demonstration of low-cost, simple satellite groundstations. The CCD camera has not yielded the hoped-for image quality, but regular image dumps have stimulated interest in image processing and acted as a development tool for the UO-11 CCD Experiment. UoSAT-1 has not exhibited any measurable degradation since the failure of the secondary computer memory devices in the summer of 1982 and the rate of decay of the orbit has been much less pronounced than was anticipated — giving rise to an extended orbital lifetime of, perhaps, another two years

METEOROLOGICAL SPACECRAFT NEWS

A good publication for those with an interest in 'weather satellites' has become established over the last year — *'The Journal of the Environmental Satellite Amateur Users Group'* published by R J Alvarez WD4MRJ, details available from: 2512, Arch Street, Tampa, Florida 33607, USA.

The Journal appears quarterly, last issue twenty two pages and includes station construction details, weather satellite status reports, meteorological studies, data receiving tips, Soviet weather satellite reports and UoSAT status reports.

UoSAT/OSCAR-11 OPERATIONS

The Telemetry Channel 13, which has previously been labelled as 'spare', has now been named and calibrated as:
435 MKz Downlink Transmitter VCO Control Voltage (V=N/20)

This channel was kept free right up until final s/c checkout just in case there were any last minute demands, but none arose and it was allocated to the default — monitoring the 435 MHz transmitter VCO control voltage. Stored telemetry from the On Board Computer (OBC) has enabled us to confirm the allocation and its calibration. The 435 MHz downlink is functioning well with an output RF power of 1 watt, consuming 225 mA from the +14V unregulated bus.

Experiments continue with the 9600 bps nrzi psk data on the 435 MHz downlink in preparation for DCE, CCD and Particle/Wave Experiments. The tests this week focussed on calibration of the modulation index and evaluation of an iF demodulator/decoder.

The preliminary results look very encouraging, but more work still needs to be done before we feel happy about releasing all the details — we don't want to send you all on wild goose chases!

The spacecraft AZ-spin rate continues to increase slowly of its own accord, due to cross-coupling of the libration energy into rotational energy, and de-spin manoeuvres have continued this week to keep the Z-spin rate slower than about 2 minutes per revolution — it seems that we need to despin about once every five days — repeated whole-orbit surveys indicate that the GG-lock remains very stable.

No CCD images were taken this week as work continues on testing the 9600 bps downlink

AO-10 TRANSPONDER CHANGE- (Tnx Telemail)

The transponder on time has been extended on AO-10 now that the eclipse season is over. The interim schedule is as follows:

The TRANSPONDER will be on between MA 235 through perigee to MA 218. The TRANSPONDER will be off betweem MA 219 to 234 inclusive. Mode L remains the same times every day MA 100 to 116 inclusive. The beacons have the full details of the new schedules.

UPS AND DOWNS

Tnx to Bob VK3ZBB we again have the latest list of Launches and Re-entries

MURPHY STRIKES

I wonder how many readers noted the printers error in the October issue in the Oscar-10 Apogees explanation. The text is correct, as is Table 1 for the 16th October. However the Oscar 10 Apogees Table for October (Page 41) in the UTC Column has the Apogee times for the 16th and 17th reversed. The 16th should read 0949:50 and the 17th 0908:55. Of all times for the printer to go cross-eyed. Hi!

Once again the time has come to bid all readers of this column — A Joyous and Pleasant Christmas and a Prosperous New Year.

de Colin VK5HI
AR

Radio Amateur Old Timers Club

AUGUST QSO PARTY

In previous years, the 7 MHz band has always provided good conditions for the Winter Party, but it sadly let us down this year and contacts between some adjoining states were few and far between.

A number of comments were made regarding times and frequencies — the 0800 UTC to 1100 UTC time slot was selected to enable the VK6s to work the eastern states and ZL, and so that the ZLs would not have to stay up all night — 2300 local for them is late enough! Of course, for our few W friends, it is about 0300 local!

The subject of middle frequencies for both CW and SSB will be discussed with ZL before the next 7 MHz party — it is thought likely that there will be some changes in these.

From the logs submitted, it appears that about thirty seven stations took part, from which twenty three members of the Australian Club submitted logs. Activity from ZL was less than usual, or perhaps it was the conditions, but we did receive a log from ZL1ADP.

The remarks of John Stewart W6GTI, member no A445 *"It sure is a pity that more members do not participate and I QSO'd all that I heard, so try and get more members on for the next one"* echo the sentiments of most regular participants There are far too few members from both VK and ZL to keep one busy for just three hours.

SCORES

	MODE	QSOs	MULT	TOTAL
VK3JI	CW/SSB	18	10	900
VK3JA	CW/SSB	17	9	765
VK6HC	CW/SSB	19	7	665
VK3KS	CW	13	10	650
VK2AWA	CW/SSB	16	8	640
VK3XB	CW	13	9	585
VK7CH	CW	16	7	560
W6GTI	CW	14	5	490
VK3FC	CW	11	8	440
VK3ZC	CW	11	8	440
VK3XF	CW/SSB	12	7	420
VK7AL	CW/SSB	11	5	385
VK6FS	CW	11	6	330
VK5KV	SSB	10	6	300
VK7BJ	SSB	8	7	280
VK2PU	SSB	11	5	275
VK5CO	SSB	9	6	270
VK6WZ	CW/SSB	9	6	270
VK7RY	CW/SSB	8	6	240
VK5HT	SSB	6	6	180
VK3QZ	SSB	5	5	125
VK7GB	CW/SSB	6	4	120
VK6HX	CW	4	3	60
ZL1ADP	SSB	4	3	60

Next Party - 14 MHz 11th March 1985 0200 UTC to 0500 UTC **AR**

WORLD-WIDE LOCATOR

IARU Region 1 Division have decided to adopt the Maidenhead Locator System effective 1st January 1985

All three regions have now adopted the use of this Locator, Region III agreed to use it in April 1982

Now that the system is world-wide and it is non-repeating it may be the basis for a new set of DX awards as many of the problems arising in the administration of current awards would be avoided. In November 1983 and February 1984 Amateur Radio magazines VHF column, Eric VK5LP, gave a very comprehensive description of how the system works and an explanation of how to use it

OSCAR-10 APOGEES — DECEMBER 1984

DATE	DAY #	ORBIT #	APOGEE UTC HHMM:SS	SATELLITE CO-ORDINATES LAT DEG	LONG DEG	BEAM HEADINGS SYDNEY AZ DEG	EL DEG	ADELAIDE AZ DEG	EL DEG	PERTH AZ DEG	EL DEG
DEC 1	336	1104	0142 53	13	140	67	0				
2	337	1107	1241 34	13	306					297	7
3	338	1109	1200.40	13	296					304	14
4	339	1111	1119 47	13	287			295	3	311	21
5	340	1113	1038 55	13	277	293	1	301	10	319	27
6	341	1115	0958 00	13	268	299	8	308	17	329	32
7	342	1117	0917 08	13	259	306	15	317	23	340	36
8	343	1119	0836 16	13	249	313	22	326	28	353	38
9	344	1121	0755.21	12	240	322	27	336	32	6	39
10	345	1123	0714.29	12	231	332	32	348	35	19	37
11	346	1125	0633 37	12	221	344	35	0	36	30	33
12	347	1127	0552 42	12	212	356	37	13	35	40	28
13	348	1129	0511 50	12	202	9	37	25	33	49	23
14	349	1131	0430.58	12	193	21	35	35	28	57	16
15	350	1133	0350.03	12	184	32	31	45	23	63	9
16	351	1135	0309 11	12	174	42	26	53	17	69	2
17	352	1137	0228 19	12	165	50	20	60	11		
18	353	1139	0147·24	11	156	58	14	66	4		
19	354	1141	0106.32	11	146	65	7				
20	355	1143	0025.40	11	137	71	-1				
21	356	1146	1124.19	11	303					297	11
22	357	1148	1043·27	11	293			289	-1	304	18
23	358	1150	1002·35	11	284	287	-3	295	7	312	25
24	359	1152	0921·40	11	275	293	5	302	14	321	31
25	360	1154	0840 48	11	265	299	12	309	20	331	36
26	361	1156	0759.56	10	256	306	19	318	26	343	39
27	362	1158	0719.01	10	246	314	25	328	32	357	41
28	363	1160	0638 09	10	237	323	31	339	36	10	41
29	364	1162	0557·17	10	228	334	35	351	38	23	38
30	365	1164	0516 22	10	218	347	38	4	38	35	34
31	366	1166	0435 30	10	209	360	39	17	37	45	29
JAN 1	1	1168	0354 37	10	200	13	39	29	34	53	22
2	2	1170	0313 43	10	190	25	36	40	29	61	15
3	3	1172	0232 51	10	181	37	32	49	23	67	8
4	4	1174	0151 58	9	171	46	26	57	17	73	1
5	5	1176	0111 04	9	162	55	20	64	10		
6	6	1178	0030 11	9	153	62	13	70	3		
6	6	1180	2349 19	9	143	68	6				
7	7	1181	1128 53	9	319					286	-1
8	8	1183	1047.58	9	309					291	7
9	9	1185	1007 06	9	300					297	15
10	10	1187	0926 14	9	291			289	3	304	22
11	11	1189	0845 19	9	281	287	1	295	10	312	29
12	12	1191	0804.27	8	272	293	8	302	17	322	35
13	13	1193	0723.35	8	262	299	16	310	24	333	39
14	14	1195	0642·40	8	253	307	23	319	30	347	43

SATELLITE ACTIVITY FOR PERIOD 1ST TO 24TH AUGUST 1984

1 Launches

NUMBER	NAME	NATION	DATE OF LAUNCH	INITIAL DATA PERIOD MINS	APOGEE KM	PERIGEE KM	INCLN DEG	REMARKS
1984-078A	HORIZONT 10	USSR	2nd Aug	1435	35785		1.5	TV CS
1984-079A	COSMOS	USSR	2nd Aug	710	40165	614	62.8	SI TM
1984-080A	GMS-3	JAPAN	2nd Aug	644.5	36496	180	29 1	Met
1984-081B	TELECOM 1A	FRANCE	4th Aug	–	–	–		
1984-081A	ECS 2	ESA	4th Aug	–	–	–	–	
1984-082A	COSMOS 1587	USSR	6th Aug	90.2	394	209	72.9	SI TM
1984-083A	COSMOS 1588	USSR	7th Aug	93.3	457	438	65	SI TM
1984-084A	COSMOS 1589	USSR	8th Aug	116	1523	1500	82.6	SI TM
1984-085A	MOLNIYA 61	USSR	10th Aug	–	–	–	–	
1984-086A	PROGRESS 23	USSR	14th Aug	88 8	267	194	51 6	Auto Cargo
1984-087A	COSMOS 1590	USSR	16th Aug	89 3	293	221	82.4	SI TM
1984-088A	AMPTE-CCE	USA	16th Aug	945 1	49926	1124	4.8	*
1984-089A	MOLINYA 62	USSR	24th Aug	737	40877	467	62.8	TV CS
1984-090A	EKRAN 13	USSR	24th Aug	1425	35580		0 4	TV

*NOTES * — Also launched on this vehicle were payloads IRM and UKS.*
TV — Television.
CS — Communication Systems
SI — Scientific Instruments.
TM - Telemetry.

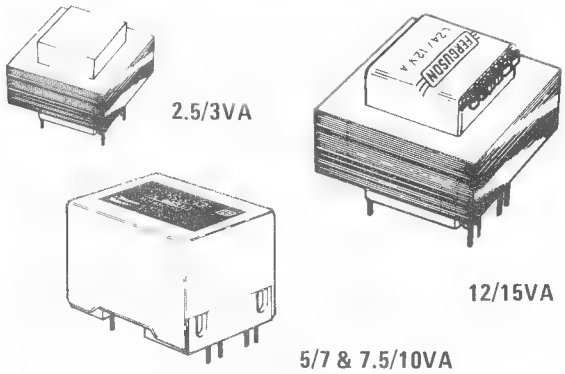
2 RETURNS

During the period the following satellites re-entered or were recovered.

1984-039A	*OPS 8424*	*13 Aug*
1984-066A	*COSMOS 1576*	*24 Aug*
1984-074A	*COSMOS 1582*	*2 Aug*
1984-076A	*COSMOS 1584*	*10 Aug*
1984-086A	*PROGRESS 23*	*28 Aug*

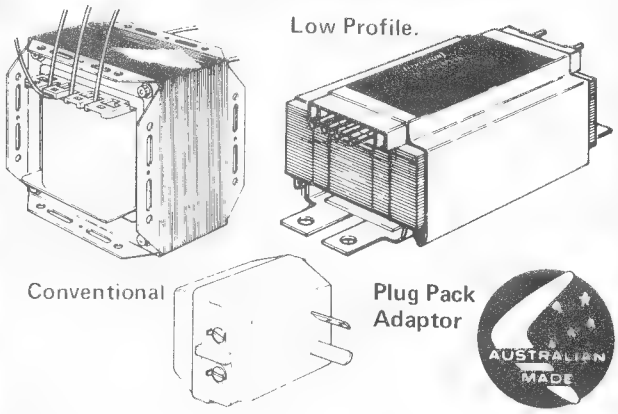
Thirty one other objects also re-entered during the Period.

PCB TRANSFORMERS



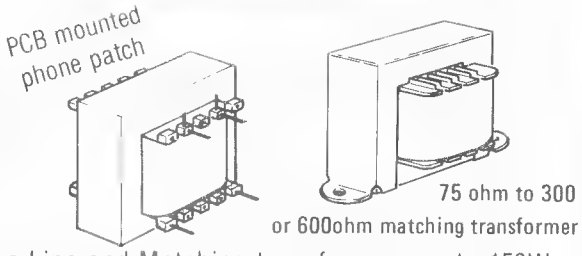
- Manufactured to AS3126 and Telecom approved
- Suit standard PCB grids and simplify construction

POWER TRANSFORMERS



- Wide range of secondary voltages from 1.5V to 115V
- Stock range has ratings up to 1000VA
- Special types for microprocessors, 115V etc

AUDIO TRANSFORMERS



- Line and Matching transformers up to 150W
- Power transformers for high power amplifiers
- Transistor drivers
- Special 'C' core transformers

Ask for MAL VK2BMS or DOUG VK2BPX

TALK TO FERGUSON - THE AUSTRALIAN COMPANY WITH NEARLY 50 YEARS EXPERIENCE OF MANUFACTURING IN AUSTRALIA FOR AUSTRALIAN CONDITIONS

Ferguson Transformers Pty. Ltd.
331 High Street, CHATSWOOD 2067 Tel: (02) 407 0261
Telex: AA25728. Melbourne (03) 328 2843

FERGUSON

CONTESTS

Ian Hunt VK5QX
FEDERAL CONTEST MANAGER

P.O. Box 1234, GPO, Adelaide, SA 5001.

CONTEST CALENDAR.

DECEMBER

1-2 ARRL 160 metre Contest.
8-9 ARRL 10 metre Contest.
1 Dec 1984 to 7 Jan 1985 Ross Hull Memorial Contest. (Rules AR Nov)

JANUARY

1 UBA SWL Competition, 1985 commences. (Rules AR Nov)
12 40 metre World SSB Championship Contest. (Rules this issue)
13 75 metre World SSB Championship Contest. (Rules this issue)
19-20 160 metre World SSB Championship Contest. (Rules this issue)
26 15 metre World SSB Championship Contest. (Rules this issue)
27 20 metre World SSB Championship Contest. (Rules this issue)
2 Hunting Lions In The Air. (Rules this issue)
Ross Hull Memorial Contest continues. To finish 7 January

FEBRUARY

23 RTTY World Championship Contest.

This issue I wish to comment on contests from the operational point of view. This aspect is most important and can make all the difference to whether your entry is successful. Again some thought and planning are essential in much the same way as the approach to your station layout.

Let us first consider Log Sheets. For many contests there are official log sheets available and in any case the rules normally spell out just what the log must contain. If you cannot obtain the official sheets simply rule up neatly a log sheet of your own including all the necessary columns and headings required. You may have access to a copying machine and thus can save a lot of work on this task, however if not it is still worth while putting time and effort into making sure that you have enough sheets to last you through the contest. There is nothing worse than having your well planned system break down in the middle of a contest, such as having to make up more log sheets.

In many cases the number exchange system for the contest will allow you to Pre- Number the log sheets. This is particularly so in the Remembrance Day Contest which requires simply a serial number starting from 001 and increasing by one for each contact. Other contests require an RS (RST) figure before the serial number so remember to leave room for adding these in front of the pre-numbered serial. An easy way of doing this numbering is to obtain an automatic numbering machine as used in business offices. You probably have a friend who could borrow one for you. Then estimate the number of contacts you expect to make and produce at least a few more sheets than you think you will need. If you make up a Master Set of such log sheets you can put them aside and use them for many contests by copying. Other Divisions might take note that each year the South Australian Division includes an official log sheet with the copy of the Divisional Journal sent out just before the Remembrance Day Contest and has been doing so for about twenty years.

Having prepared your log sheets the next task is to work out some form of Check Sheet. These are sometimes called Dupe Sheets, as their aim is to allow you to keep a quick reference list of contacts permitting fast checking to ensure contacts with any particular station are not being duplicated. There has been an example of a Dupe Sheet published in Amateur Radio magazine for at least the last couple of years and you could use such a system if you wish. Personally I consider the method described to be most unwieldy as too much information is crammed into a small space. Also in most contests it is required that you provide information on a band to band basis. When working on a particular band you need only information applying to that band. I will describe another type of check sheet which I have found to be extremely useful and which allows almost instantaneous checking for duplications on a particular band. I do not claim any originality for this system as it was explained to me by the late 'Tubby' Vale VK5NO who many of you would remember as one of the top contesters in the world as well as being a lightning fast CW man. The method was also described by myself at a VK5 Divisional General Meeting just over ten years ago, so it certainly isn't anything new. A separate check sheet is used for each band.

The method for these sheets is as follows:—

Obtain a sheet of paper approximately double foolscap size. Across the top (the widest dimension) mark headings for columns according to the number of call areas you expect to contact in the contest. I will describe this as for a Remembrance Day Contest. The sheet can be suitably modified for other contests.

The call areas for the Remembrance Day Contest are; VK1 thru VK0, P2 and ZL. The width of the column for each call area is determined by the number of sub-call areas you will need to enter. For example, as there are not too many operators from the VK1 area only one column will be required for that call area. A wider column for VK2 is divided up into sub-columns VK2, 2A, 2B, 2C etc. There are not too many calls in the VK2 area beginning with VK2E, therefore one of the columns already mentioned can be shortened and re-designated 2E to both save space on the sheet and keep a compact grouping for that call area. The same process is repeated across the sheet for VK3, 3A, 3B, 3C etc through to single columns for VK7, 8 and VK9. P2 and ZL need only a single column. You may now have deduced just how this method is operated. Should you work VK2AB for example you simply show his call under the VK2 column as AB and if you work VK2AAB you list him under the 2A column as AB. Try it out on a rough sheet of paper and list a fair number of hypothetical station calls under several columns. Then have a friend call out several callsigns and look up the check sheet to see if they are listed. You will find that with just a little practice you will become adept in both selecting and scanning down the column needed and quickly coming back with the correct answer as to whether the station is listed or not. Each entry takes only about a second to make in practice and should always be made immediately at the time of contact. This can be done whilst sending the contact serial number as you will have already checked that the station is not on the list. It only requires two letters to be written in. A separate sheet is made out for each band. Only the 80, 15 and 10 metre sheets need the inclusion of columns for Novice callsign prefixes. (2N, 2P etc.)

Some operators have the use of computers for log keeping and checking purposes, however I do not intend to go into the subject of computer systems except to say that the method I have described above can be just as fast, if not faster, than the use of a computer and does not suffer any likelihood of failure due to power interruptions, electronic component failure etc. This method and computer methods alike are only as accurate as the operator.

Having gone to all the trouble described with your logs and check sheets it would be a pity if a reasonably neat entry was not submitted to the Contest Manager. If your log contains a very large number of entries it would be asking a great deal for you to re-write the whole log. Perhaps this might occur with some of the more untidy pages, however I have found that a little judicious use of the readily available correcting compounds, which allow you to blank out the incorrect or untidy figure or letter, allows a log to be tidied up to a remarkable degree with not too much effort. After that the log can be copied and the tidying up process can hardly be distinguished. After all, one would expect that it would be a matter of pride for most of us to submit a tidy looking log. Also it is important that you do not forget to include with your log the required summary sheets, station details, declarations or dupe sheets. It would be a shame if your log was disqualified, particularly if a large entry, because you had not complied with the rules of the contest. So check through all the rules to make sure that you have not forgotten anything.

Space precludes a continuation of this discussion to include further comments on actual operation of your station so I will take up that side of the subject later.

AR

EXAMPLE CONTEST CHECK SHEET (For VK5 operation 20 metre band)

20 METRES — REMEMBRANCE DAY CONTEST 1984

	VK	VK2			VK3			VK4		VK	VK	VK	P2	ZL			
	1	2	2A	2B	3	3A	3B	4	4A	6	7	8	9	1	2	3	4
1	AO	DO	NS	DI	WP	DW	BC	GB	MN	NE	HK	DI	GB	ML	QE	GO	BL
2	ACT	PU			KI	BP		TE		DY				FN	AUF		
3	BU	JM			OM	UQ								ABN			
4					KT	UI											
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18		2C	2D	2E	3C	3D	3E	4W				9	VK0				
19		AL	EW	AD	CT	AM	AT	IC				YA	HI				
20								IN				YB					
21																	
22																	
23																	
24																	
25																	
	3	4	2	2	5	5	2	4	1	2	1	1/3	1/1	3	2	1	1
	3			8			12		5								7

(Notes 1 As this check sheet is for use in VK5 no VK5 column exists ;
2 Numbers down left hand side and spaces at bottom of sheet can be used as an aid in analysing results of the operation

In the September issue I covered the matter of scoring for contests and also the scoring system used for the Championship Trophy. In the course of my discussion I selected, virtually at random, a couple of examples where such scoring might be pointed out as questionable. Once again I reiterate that I knew nothing about the operator of VK2PWS. I now know a little more. Firstly that he is with the Royal Australian Navy at Jervis Bay. (I know the area very well Wayne and I had my first trip on an Australian Navy patrol boat out of there.)

I also know that Wayne VK2PWS is an honest man. As a result of my comments he has written to me and told me that his entry for the 1984 Field Day Contest in error. He had intended to try some CW contacts and they had not eventuated, thus his log should have been in the Phone Only section and not the Open. Wayne, as a relative newcomer to the contest scene, had not realised his mistake. Wayne makes a number of interesting comments including the fact that he should only be entitled to 4 C/C points and also that if VK3ADW had made just one CW contact he could have gained 9 points rather than just 7 points in the Contest Champion Competition. He further says *"I'm not after the points for the Contest Champion Trophy, I'm just after the fun of it."* I feel that his approach is very right and proper and he should receive an accolade for both his honesty and his spirit in this regard. I would, like rather briefly, to point out that I have been considering the problem of operators doing such as make just one or two contacts on another mode just to qualify themselves for a different section of a contest. Perhaps this can be overcome by a blanket rule that either a certain minimum number of contacts must be made on any allowable mode or that points and/or certificates will only be allocated where the Contest Manager sees such to be fair and warranted. By the way, I have not had access to any of the logs for the 1984 Field Day so all my observations in connection with this contest have been unbiased.

Whilst on the subject of the Field Day Contest it is interesting to note that I have had some feedback from clubs and individuals regarding my comments on timing of Australian contests and particularly the Field Day Contest. Only one division has commented as far as the WIA is concerned. I would thus repeat my request as shown in italics in the August issue. "(Please note that such matters discussed in these notes should be brought to the attention of divisional secretaries and councils.)" Suffice to say that the majority of my correspondents agree with my comments. I will thus be asking the Federal Office to formally contact each division to again provide an opportunity to make comment on this subject. Such an opportunity was offered at the last Federal Convention however the motion concerned apparently aroused no interest as it lapsed for want of a seconder. The point of this is that you may well be prepared for a change in contest dates as mooted.

With respect to the Novice Contest my correspondence has spelled out very strongly that the Contest Manager may have his neck well and truly rung not just once but several times by irate operators from the north of VK4 and VK6 particularly if this contest was placed at any time in the summer months. Air-conditioned shacks may be OK, however they are no answer to the high level static which exists on the prime 80 metre novice band during the summer and especially in the more tropical areas.

As a result of my correspondence, talks with representatives of groups and clubs particularly during a recent tour interstate, I might be so bold as to suggest that our contest plan should be modified to the following:

John Moyle Memorial Field Day Contest — Late March/early April. (Maybe to co-incide with the CQ-WPX Contest to provide more contacts.)
VK Novice Contest — June.
Remembrance Day Contest — August. (This date set by tradition as being nearest to the cessation of hostilities in the Pacific theatre.)
VK/ZL Contest —October. (No change.)
Ross Hull VHF/UHF Contest — December/January. (No change.)

So, once again I would solicit your comments both on these proposals and on any other contest matters.

This month are the rules for 'Hunting Lions In The Air, 1985,' together with the programme of World SSB Championship Contests sponsored by '73' magazine as well as the RTTY World Championship Contest. Each of these should kick the 1985 Contest year off to a good start. I trust that you will enjoy them.

CONTEST CHAMPION TROPHY 1983 WON BY VK3XQ.

These results have been delayed due to the need for the results of the VK/ZL Contest, which were published in the September issue. These final results have thus been compiled during October which means that with the lead time applying to publication they do not appear until this issue. The breakup of scores for each of the contests involved is shown in the table which is a follow on from the table previously published in the May issue. The listing only includes those who entered all four contests.

Contest Champion Trophy Points Table 1983.

VKs	JM	RD	Novice	VK/ZL Ph.	VK/ZL CW	Total
3XQ	10	9	15	7	3	44
5QX	8	0	16	9	10	43
2BQS	8	8	10	9	0	35
3XB	9	6	9	3	7	34
3CGH	9	8	8	8	0	33
3BKU	9	4	8	6	1	28
3DAK	5	9	5	6	0	25

Congratulations are due to VK3XQ for his excellent effort in the contests throughout the year. His win in this competition is all the more meritorious when you check the contest results. There was a great deal more competition within VK3 particularly in the VK/ZL Contest. The trophy will be suitably inscribed and forwarded to VK3XQ as soon as possible.

Now the end of the year draws nigh and we look towards Christmas, a season of goodwill, holidays and all those other extra blessings we enjoy at this time of the year. For many it will be a time for special reunions of families, for others the fun of travelling on holidays. Might I through the medium of this column plead for just several things. Firstly a thought for others who are not as well off as you are. If you see the opportunity to help someone else why not take that opportunity be that person an amateur radio operator or not. I know that you will reap great benefit from such actions. Next, whilst driving on our roads please take special care so that you will not be the one to bring harm and distress to your family or others through being involved in an accident. Finally, how about trying to keep the spirit of tolerance, love and friendship prevalent at Christmas time alive throughout the rest of the year? Surely we should all be doing our part to try and make this a better world particularly as many of us have the capability of contact with so many people far and near.

May your Christmas be a very happy and blessed one and may the New Year be one of happiness, peace and success for you all. I hope to be able to help make the contest activities during 1985 interesting and enjoyable for you all.

RULES FOR ANNUAL WORLD SSB CHAMPIONSHIP CONTESTS sponsored by 73 Magazine.

This series of contests involves each of the bands 160 m, 75 m, 40 m, 20 m and 15 m as separate SSB contests on differing dates. In most instances the rules are the same for each contest. Where any variation occurs for an individual contest this is indicated. Note that a different contest manager is concerned for each contest. The rules for the RTTY World Championship will be published in the January issue.

Contest Periods:
40 metres 0000 to 2400 12 January, 1985.
75 metres 0000 to 2400 13 January, 1985.
160 metres 0000 19 January, 1985.
to 2400 20 January, 1985.
15 metres 0000 to 2400 26 January, 1985.
20 metres 0000 to 2400 27 January, 1985.
Times in UTC.

Misc Rules: Work as many stations as possible on the band concerned during the specified times of allowable operation. The same station may be worked ONCE. Crossmode contacts will not count. Single operator stations may operate a total of 16 hours for each band EXCEPT on 160 m where they may operate for a total of 32 hours. All the multi-operator stations may operate the entire contest period. Off periods must be noted in your logs and on your summary sheet. Off periods are NO LESS THAN 30 MINUTES EACH.

Operator Classes: (A) Single Operator, Single Transmitter, Phone only. (B) Multi-operator, Single Transmitter, Phone only.

Exchange: Stations within the Continential 48 US States and Canada transmit an RS report and State, Province or Territory. All other stations, including Alaska and Hawaii, transmit RS report and DX Country.

Points: 5 QSO Points for contacts with W/VE Stations located within the Continental 48 US States and Canada. All other contacts score 10 points each. List points for each contact on your logsheet.

15 METRES ONLY: 5 QSO Points for contact *within* your continent. 10 QSO Points for contact *outside* your continent.

Multipliers: *1 Multiplier Point* is earned for each US State (48 Maximum. A District of Columbia contact may be substituted for Maryland multiplier), each Canadian Province or Territory (13 Maximum) and DX Country (excluding the Continental US and Canada.)

Final Scores: Total QSO Points times Total Multiplier Points equals CLAIMED SCORE.

Contest Entries: Each entry must include a contest log, a dupesheet, a contest summary and multiplier check list. We recommend that contestants send for a copy of the contest forms. Enclose an SASE to the contest adress listed below.

Contest Deadline: Each entry must be postmarked no later than the deadline shown for each contest as follows:
40 metres — 12 February, 1985.
75 metres — 13 February, 1985.
160 metres — 20 February, 1985.
15 metres — 26 February, 1985.
20 metres — 27 February, 1985.

DX Window: 160 METRES ONLY. Stations are expected to observe the DX Window from 1.825 to 1.830 MHz as mutually agreed by top band operators. Stations in the US and Canada are asked not to transmit in this 5 kHz segment of the band. During the contest all W/VE stations are requested to utilize only those frequencies from 1.808-1.825 and 1.830-1.900 MHz.

Disqualifications: Omission of any required entry form, operating in excess of legal power, manipulating of contest scores or times to achieve a score advantage or failure to omit duplicate contacts which would reduce the overall score more than 2 percent are all grounds for immediate disqualification. Decisions of the contest committee are final.

Awards: Contest awards will be issued in each operator class in each of the Continental 48 US States, Canadian Provinces and Territories, and each DX Country represented. A minimum of 100 QSOs must be worked to be eligible for contest awards.

Contest Address: To obtain entry forms, or to submit an entry, forward an SASE to the address as applicable for the band concerned as below.

40 Metre Contest, *Dennis Younker, NE6I, 43261 Sixth Street East, Lancaster, California, 93535.*
75 Metre Contest, *Jose A. Castillo, N4BAA, 1832 Highland Drive, Amelia Island, Florida, 32034.*
160 Metre Contest, *Harry Arsenault, K1PLR, 603 Powell Avenue, Erie, Pennsylvania, 16505.*
15 Metre Contest, *Bill Gosney, KE7C, 2665 N. Busby Road, Oak Harbour, Washington, 98277.*
20 Metre Contest, *Chuck Ingram, WA6R, 44720 N. 11th., Street, Lancaster, California, 93535.*

I must apologize for the rather late appearance of these rules for international contests to be held only one month away, however the copies of the rules were not forwarded direct to me for inclusion in this column but came via a rather roundabout way.

Hunting Lions in the Air 1985 Contest Rules

Objective — The main objective of the contest is to "Create and Foster a Spirit of International Under-

standing and Co-operation" among Lions and amateur radio operators through worldwide communications. The contest is held to commemorate the birthday of Melvin Jones, the founder of Lionism.

Sponsor and Co-ordinator — The contest is sponsored by LIONS CLUBS INTERNATIONAL and co-ordinated by the Rio de Janeiro Arpoador (Brazil) Lions Club. The co-ordinating Club will appoint a Contest Committee of no less than three members. The functions of this committee will be to verify logs, tabulate points and submit its findings to the co-ordinating Club.

Time — The 1985 Contest will be held on Saturday, 12 January, starting at 12:00 UTC and continue for a period of 36 hours.

Participation — Participation in the contest is open to all duly licensed radio operators — Lion and non-Lion, except members of the Contest Committee of the Lions Club Rio de Janeiro Arpoador. There are two modes: Phone and CW. Participation in both modes is allowed; points are counted separately. All amateur radio operators participating must operate within the licensing regulations of their countries.

Categories — Two categories are considered:

a) Single operator

b) Clubs and Associations of Amateur Radio Operators with multiple operators.

The amateur radio operators that participate for "b" category may not operate simultaneously with the same prefix and will have their points tabulated separately from the "a" category. Each callsign must be listed on the log.

Bands and Modes — Bands permitted are 80, 40, 20, 15 and 10 metres, Phone and CW. Associates of the Lions Club of Rio de Janeiro Aproador will operate mainly within the first 50 kHz of each band, either Phone or CW, and also around 14.270, 21.270 and 28.270 MHz. Phone and CW must be entered into separate logs.

Calling and Exchange — 1) Calling should be made in the following manner: Phone — "CQ . . Contest Hunting Lions in the Air, Lions Clubs International," followed by callsign. CW — "CQ . . Test Lions." 2) Exchange will be the RST report and a sequential QSO number. Members of Lions, Lioness or Leo Clubs shall indicate clearly the name of the Club.

Logs — One log for each mode. Each participant must enter in his log: the callsign, the report and sequential number of QSO — both received and sent. The Clubs or Associations should mention the prefix of their operators. In the case of Lion, Lioness or Leo, the name of the Club contacted should be mentioned and, if possible, the Lion District.

Scoring — Points and bonus will be awarded in accordance with the following rules:

a) Only one QSO (contact) with the same station in each band and mode will be counted. Phone and CW will be counted separately.

b) QSO within the same continent: 1 point.
QSO between different continents: 3 points.

c) Bonus points

- *10 extra points for QSO with a member of a Lion, Lioness or Leo Club from different countries. 5 extra points for such contacts within the same country.*
- *20 extra points for QSO with a member of the Rio de Janeiro Arpoador Lions Club.*
- *Contacts between Brazilian stations and members of the Rio de Janeiro Arpoador Lions Club will count only 5 extra points.*
- *Contacts between members of the Rio de Janeiro Arpoador Lions Club will not count any extra points.*

Judgment — Logs must be mailed by 15 February, 1985, via airmail, to the Contest Committee from Rio de Janeiro Arpoador Lions Club, Rua Sao Francisco Xavier no 246, Apt 407, 20551 — Rio de Janeiro, RJ Brazil.

Awards — The first three places in each category will receive trophies from Lions Clubs International; in "a" category (CW and Phone), the 4th through 10th places will receive plaques. Each participant that sends in his log with a minimum of 15 contacts will receive a special certificate from Rio de Janeiro Arpoador LC; in the event that the operator is a member of a Lions, Lioness or Leo Club, the Club will also be awarded a certificate. The Committee may, at its discretion, elect to recognize in a special way the Lions Club that demonstrates outstanding individual participation of its members. **AR**

AWARDS

WORKED ALL TASMANIA AWARD

The Tasmanian Division of the Wireless Institute of Australia has instituted a new award.

The purpose of this award is to further encourage all amateurs and short wave listeners to make contact with amateurs in all areas of Tasmania.

You may qualify for the award in any of the following sections and you may qualify for more than one award.

SECTION 1 — OPEN — by the use of any combination of bands and modes available to the applicant. (Split banding is permitted but cross banding is not except between NAOCP and ALOCP holders.)

SECTION 2 — HF ONLY — by the use of any combination of bands up to 30 MHz available to the applicant

SECTION 3 — VHF/UHF/SHF — as for Section 2 but above 30 MHz.

SECTION 4 — ONE BAND — of those available.

SECTION 5 — ONE MODE — of those available.

SECTION 6 — ALL NOVICE — contact with novices only (including K calls below 30 MHz).

SECTION 7 — REPEATER — via in-band repeaters.

SECTION 8 — SATELLITE — via amateur satellites Cross banding to HF allowed if permitted under licence terms.

SECTION 9 — SWLING — for short wave listeners.

Sections 4 and 5 may be combined with other sections

Applicants must make contact with stations in twenty different Municipalities (Shires) in Tasmania. A check list which MUST be used with the application is available from the Awards Manager for a stamped addressed envelope. Overseas applicants should send an addressed envelope with 1 IRC. An endorsement is available for working forty shires and a special award is available for working all forty nine. A further award is available for two contacts in each shire (ie: ninety eight contacts).

To apply for the award, applicants should forward the completed check sheets with the fee of $2 or 5 IRC's to the Awards Manager, PO Box 168, Launceston, Tas, 7250. QSL CARDS ARE NOT REQUIRED. Spot checks may be made with contacted stations in VK7 for confirmation. Upgrade fee $1 or 3 IRC's.

Contacts made after 1 September 1984 are eligible.

1 CITY OF DEVONPORT
2 CITY OF GLENORCHY
3 CITY OF HOBART
4 CITY OF LAUNCESTON
5 Beaconsfield
6 Bothwell
7 Brighton
8 Bruny
9 Burnie
10 Campbell Town
11 Circular Head
12 Clarence
13 Deloraine
14 Esperance
15 Evandale
16 Fingal
17 Flinders
18 George Town
19 Glamorgan
20 Gormanston
21 Green Ponds
22 Hamilton
23 Huon
24 Kentish
25 Kingborough
26 King Island
27 Latrobe
28 Lilydale
29 Longford
30 New Norfolk
31 Oatlands
32 Penguin
33 Port Cygnet
34 Portland
35 Queenstown
36 Richmond
37 Ringarooma
38 Ross
39 Scottsdale
40 Sorell
41 Spring Bay
42 St Leonards
43 Strahan
44 Tasman
45 Ulverstone
46 Waratah
47 Westbury
48 Wynyard
49 Zeehan

AR

NOVEMBER BEST PHOTOGRAPH

The judges selected the cover photograph of the November magazine.

The winner of the best photograph for 1984-85 will win $100 worth of Agfa Videotapes and film kindly donated by Agfa Gevaert Limited.

MAGAZINE REVIEW

Roy Hartkopf, VK3AOH
34 Toolangi Road, Alphington, Vic 3078

(G) General. (C) Constructional. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

HAM RADIO July 1984. VHF/UHF Propagation. (G) Heatsinks. (T) 2 metre J Pole Antenna. (C) Wideband VCO design. (P)

WORLDRADIO August 1984. American and international news. D Xpeditions. Olympics. Satellite news. Maritime Mobile news. QRP. New products. (G)

CQ — TV May 1984. General ATV information. Color bar generator. V Sync processor etc. (G)

CQ — TV August 1984. General ATV information. Small video studio practice. 24cm colinear. (C)

BREAK IN July 1984. Kermadec Expedition, 1984. (G) NZART Conference. (G)

QST July 1984. ARRL National convention (G) Digital Audio filters. (P) Diodes. (N) Computer control for the IC-720. (C)

CQ August 1984. Antenna special issue. Plywood tower. (C)

WHAT'S NEW IN ELECTRONICS August 1984. Technical and trade information on new components and equipment. (G)

LIMA ALPHA NEWS July 1984. Electrical fires and explosions. (G)

NOTE. *I frequently receive letters asking where copies of the information mentioned in the MAGAZINE REVIEW can be obtained. Mainly the letters come from country members. First try the State WIA Division, also the State Public Library. Both should be very helpful. All the magazines reviewed are obtained from the Federal Headquarters and are returned there for filing. Finally if any reader has a particular problem I will be glad to help direct. Please send a SASE. Many of the titles in the magazines are misleading. "Johnnie's Wonder Box" for example would mean nothing. Other titles are very long. Therefore the references given in the Review are not necessarily the titles as they appear in the magazine but are hopefully more descriptive of the actual material in the article.* **AR**

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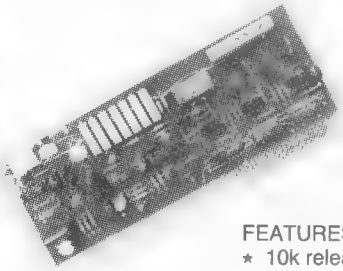

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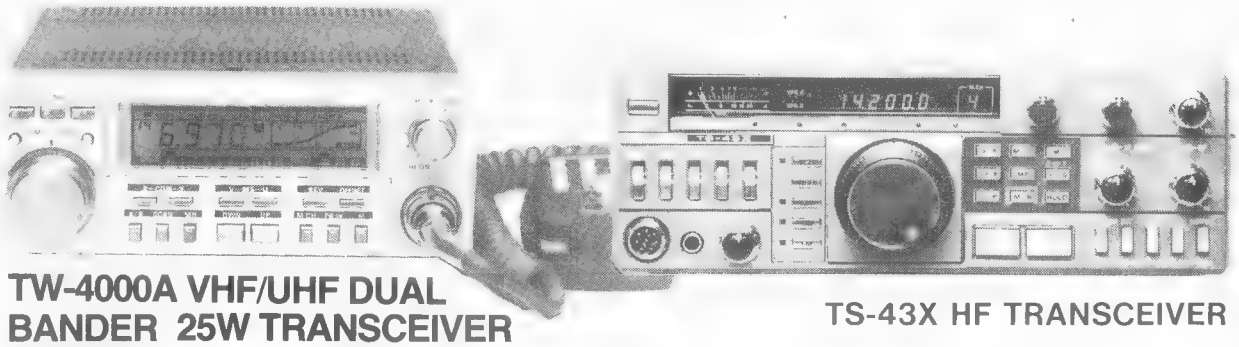

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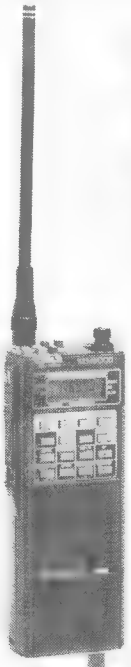

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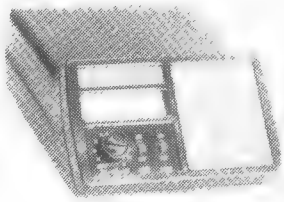

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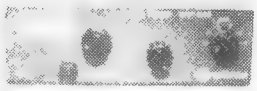

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This months EMC column features an article reprinted from EMC Technology Magazine — October-December 1983. We thank Mr E R Price, Managing Editor for his permission to print. Regrettably this will also be the last regular EMC column by Tony VK3QQ. We wish Tony every success in the future and thank him for his fine contributions over the years. Thankyou Tony.

NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ
FEDERAL EMC CO-ORDINATOR
38 Wattle Drive, Watsonia, Vic. 3087

The Role of Integrated Circuits Decoupling in Electromagnetic Compatibility

by Joseph E. Johnston Rogers Corporation Rogers, Connecticut 06263

For most electronic systems, the primary source of radiated emissions is the printed circuit boards contained within that system.* Because of long trace runs carrying transient currents with a sizeable high frequency (HF) spectral content, PC boards are efficient radiators of electromagnetic interference (EMI). However, PC boards can be designed that will fully comply with Federal Communications Commission (FCC) standards using techniques specifically addressing this problem. A 10 dB to 20 dB improvement is not unusual in a comparison of functionally identical boards, one of which is carelessly designed and the other designed to minimize EMI. Often this is the single most cost-effective means of reducing emissions to an acceptable level.

POWER DISTRIBUTION AND SIGNAL INTERCONNECTS

There are usually two primary sources of EMI on a PC board — *signal interconnects* and the *power distribution system.* Signal interconnects include all signal traces, terminations and the signal lead frame members within Integrated Circuit (IC) packages. The power distribution system consists of all power and ground traces, power and ground planes, bulk decoupling capacitors, local decoupling capacitors and the power and ground lead frame members within the IC packages.

It is very difficult to predict the relative importance of these two sources. In some systems, power distribution related emissions can be the source of over 95% of total emissions measured to be out of compliance. Often, the opposite is true. Since metal-oxide semiconductors (MOS) draw large transient currents from the power distribution system during switching, and require very small inter-device currents for changing the gate voltage on other MOS devices, the distribution system tends to have a more pronounced effect on EMI than in the case of transistor-transistor logic (TTL)-based systems.** The inter-device currents in a TTL system are much larger; therefore, signal interconnects are often a major source of EMI. Boards using a variety of IC families would fall somewhere in between these two extremes.

Signal interconnect design and routing and its effects upon EMI have received considerable attention, whereas the power distribution system has not. Frequently, signal interconnects are routed first and then the power and ground traces are routed wherever they fit. Local decoupling capacitors may be left out entirely or placed at a distance from the ICs they service. This sort of power distribution system will be an efficient radiator of EMI and also may be noisy enough to upset the operation of the board itself. For a PC board to have low noise and minimum EMI, the power distribution system must be designed with the same care that the signal interconnects receive.

REDUCING EMI

The power distribution system would not radiate at all it there were only a DC current demand. Integrated circuits, however, draw large transient currents during logic switching. These current pulses have fast rise and fall times and therefore have significant spectral content within the FCC regulated band (30 MHz-1 GHz). The faster the IC, the larger the portion of the spectrum falling within the band. However, speed is critical in electronic systems so increasing rise and fall times to reduce EMI is not a viable solution.

The next best solution is to contain these high frequency pulses in the smallest closed loop area possible, since EMI is a function of loop geometry and frequency. This is generally accomplished by using a local decoupling capacitor for charge storage and short interconnects to the IC. As long as the impedance of this decoupling loop is much lower than that of the rest of the power distribution system, the high frequency components of the current will remain almost entirely within this loop, thereby minimizing EMI (see Fig 1). When the impedance of the loop is no longer much lower than that of the rest of the system, some fraction of the high frequency component will be carried on the larger loop formed by the power distribution traces and higher emission levels will result.

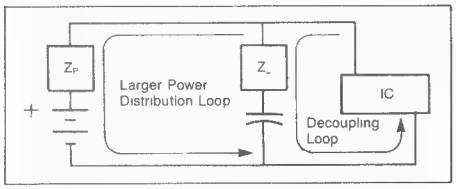


Figure 1 — Power Distribution System Model.

The key, then, is to minimize the impedance of the capacitor and the interconnects. The capacitor, ideally, should have no lead inductance, low loss and stable capacitance through 200 MHz, and be as close to the IC as possible. Such a capacitor would have very low impedance and have an excellent ability to deliver current in the FCC regulated band.

Unfortunately, real capacitors are often far from the ideal. Most decoupling capacitors are Z5U grade barium titanate ceramic capacitors. Barium titanate is used because of its high dielectric constant which allows small capacitors to have relatively large capacitance values. This ceramic performs extremely well, both in terms of lossiness and capacitance, up to resonance which can vary from less than 1 MHz to nearly 20 MHz depending upon the formulation and packaging. Above resonance it becomes lossy and the capacitance begins to fall. This generally limits the effectiveness of a good Z5U capacitor to the 1 to 50 MHz frequency range.

Other dielectrics such as strontium titanate, NPO and some polymers have much better high frequency performance but have a low dielectric constant. This can make them unsuitable for low frequency (ie DC to 10 MHz) decoupling. There is, therefore, a tradeoff of high capacitance of low frequency decoupling versus low losses and stable capacitance for good high frequency decoupling.

If the PC board operates well with the relatively high levels of low frequency noise, which usually result from low-valued local decoupling capacitors, then they should be used as they do reduce emissions better than most high valued decoupling capacitors. However, if this is not the case then some mix of the two types may be used. It is best to have the resonant frequency of the decoupling loop at or near the most troublesome frequency because the loop's impedance is lowest at that point. When mixing the two types of capacitors, do not put them next to each other as the high dielectric constant capacitor can damp the resonance of the more frequency stable, low-dielectric constant capacitor. In cases where the EMI problem is below 50 MHz, the best choice overall is a good, low inductance Z5U (or equivalent) capacitor because it combines excellent low frequency decoupling with reductions in radiated emissions up to that frequency.

All real capacitors also have some inductance. This inductance becomes the dominant component of the capacitor's impedance past resonance and therefore significantly affects high frequency performance. Most multi-layer capacitors have an intrinsic inductance of 5-8 nH because of their internal construction. There is on the market a series of flat, special decoupling capacitors and high capacitance PC board bus bars which, because of their parallel plate construction with integral taps, have an intrinsic impedance of 2 nH or less.

The impedance of the interconnect must also be minimized. This impedance is essentially inductive assuming normal copper thicknesses and trace widths; therefore, minimization of inductance is the key. The leads of the capacitor should be trimmed to an absolute minimum, for the least inductance. The interconnect traces should be short with the supply and return lines as wide as possible and preferably on opposite sides of the board aligned one above the other.

It can be difficult to place conventional decoupling capacitors close to the IC, particularly in systems with high packaging densities. For optimum EMI performance, a capacitor at each IC (or at least every other IC) is a necessity. This can cut packaging density by 5-20% depending on the exact configuration and type of capacitor used. The problem can be reduced by using flat capacitors or capacitive bus bars which share holes with the power and ground pins of the IC and take up no additional board space. Capacitive IC sockets can also be used in some applications to achieve higher packaging densities while placing the capacitor close to the IC.

ILLUSTRATIVE EXAMPLE

To determine the effects of IC decoupling upon the radiated emissions of an electronic system, a simple PCB was fabricated which contained an Intel 8049 microcomputer IC, some driver transistors and a clock circuit. The 8049 ran a video game programme contained in internal Read Only Memory (ROM). This

circuit was selected because its radiated emissions would be largely attributable to the power distribution system. The board was operated in a 8.5 metre shielded chamber with a horizontally polarized antenna 90 cm above the board and on axis.

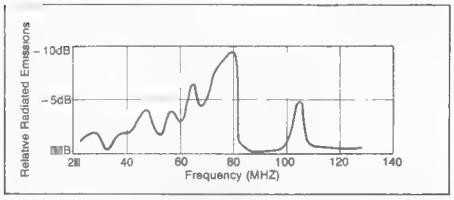


Figure 3 — Relative Emissions of the Test Board with a 22 μF Bulk Decoupling Capacitor Versus None at All.

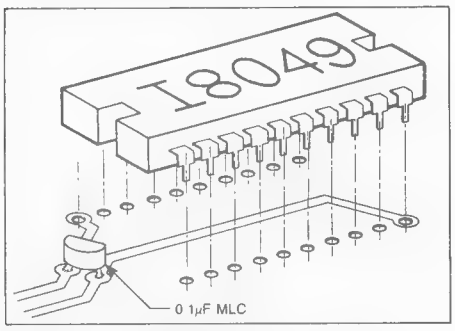


Figure 4 — Decoupling Scheme Using a 0.1 μF MLC Capacitor.

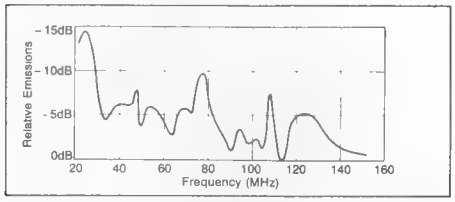


Figure 5 — Relative Emissions of the Test Board with a 22 μF Bulk Decoupling Capacitor and a 0.1 μF MLC Local Decoupling Capacitor Versus No Decoupling.

First, the board was run with no decoupling capacitors whatsover. Figure 2 shows the radiated emissions for this test condition. Then a 22 μF tantalum capacitor was placed at a distance of 13 cm from the 8049 chip for bulk decoupling. Figure 3 shows the relative emissions of this case versus no capacitors. By cutting down the decoupling loop by even this small amount, the emissions were reduced. Next, a 0.1 μF (MLC) Z5U capacitor was placed as close to the 8049 as possible (see Fig 4). Substantial reductions in emissions are noted below 50 MHz with the greatest reductions in the 20 to 30 MHz range as shown in Fig 5.

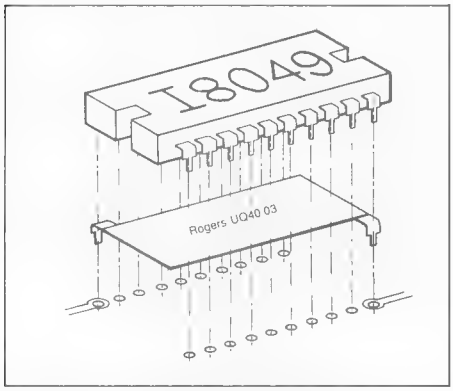


Figure 6 — Decoupling Scheme Using a 0.03 μF Rogers MICRO/Q Capacitor.

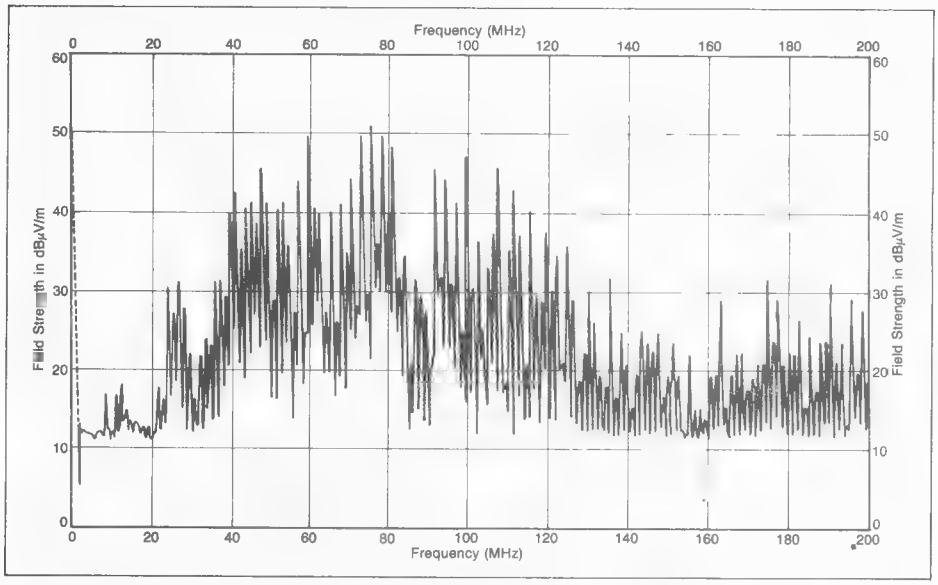


Figure 2 — Radiated Emissions of the Test Board with No Decoupling Capacitors.

Following the above test, the 0.1 μF capacitor was removed and a 0.03 μF Rogers MICRO/Q capacitor was placed under the IC (Fig 6). Due to its low inductive leads plus the fact that the field associated with traces has been eliminated, there exists substantial reductions (about 5 dB below 70 MHz and 2 dB above 70 MHz) as shown in Fig 7. The field is entirely contained within the capacitor, neglecting fringing effects which at these frequencies, and a 25 mm dielectric thickness, is a good assumption. Capacitive PC board bus bars provide at least the same level of performance and, in most cases, an extra 1 to 3 dB reduction because they eliminate nearly all of the power and ground traces on the PC board. Lately, a special 900 pF flat capacitor utilizing a frequency stable dielectric was placed under the 8049. This capacitor, which resonates at approximately 50-60 MHz when servicing a typical 40 pin DIP, substantially reduces emissions. It is particularly effective in the 20 to 80 MHz range (see Fig 8). The effect of this type of capacitor upon high frequency noise as measured on the PC board is shown in Figs 9 and 10. Figure 9 is the noise measured across the 8049 with the 0.1 μF MLC capacitor in place. Figure 10 is the same test except that the special 900 pF capacitor has been added (the 0.1 μF capacitor was still connected). The noise amplitude is virtually the same (approximately 300 mV) but the frequency spectrum has been shifted to a much lower frequency range. The board, therefore, radiates less EMI under these conditions.

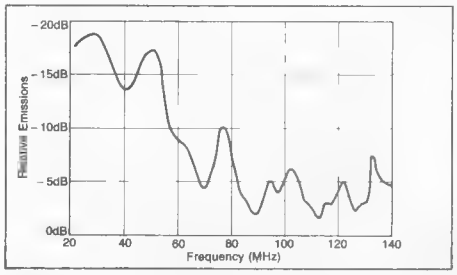


Figure 7 — Relative Emissions of the Test Board with a 0.03 μF Rogers MICRO/Q™ Capacitor and a 22 μF Bulk Decoupling Capacitor Versus No Decoupling.

CONCLUSIONS

Radiated emissions from PC boards come from some combination of emissions from the signal interconnects and the power distribution system.

continued page 60

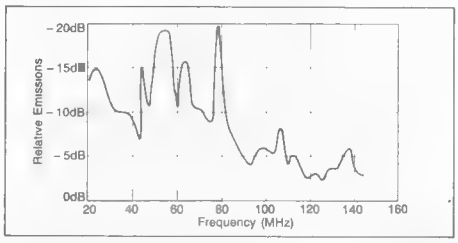


Figure 8 — Relative Emissions of Test Board with a Special 900 pF Flat Capacitor Manufactured by Rogers Corporation and a 22 μF Bulk Decoupling Capacitor Versus No Decoupling.

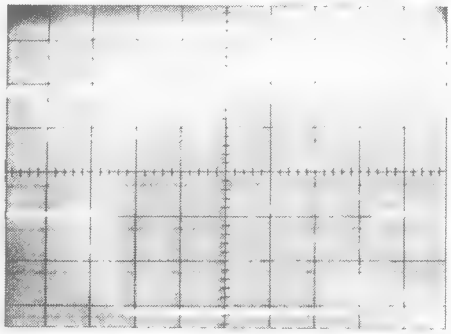


Figure 9 — Noise on the Power Distribution System Using a 0.1 μF MLC Decoupling Capacitor (100 mV/div).

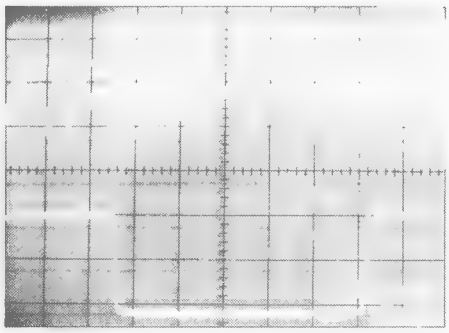


Figure 10 — Noise on the Power Distribution System using a Special 900 pF Flat Capacitor by Rogers Corporation Plus a 0.1 μF MLC Capacitor (100 mV/div).

from page 59

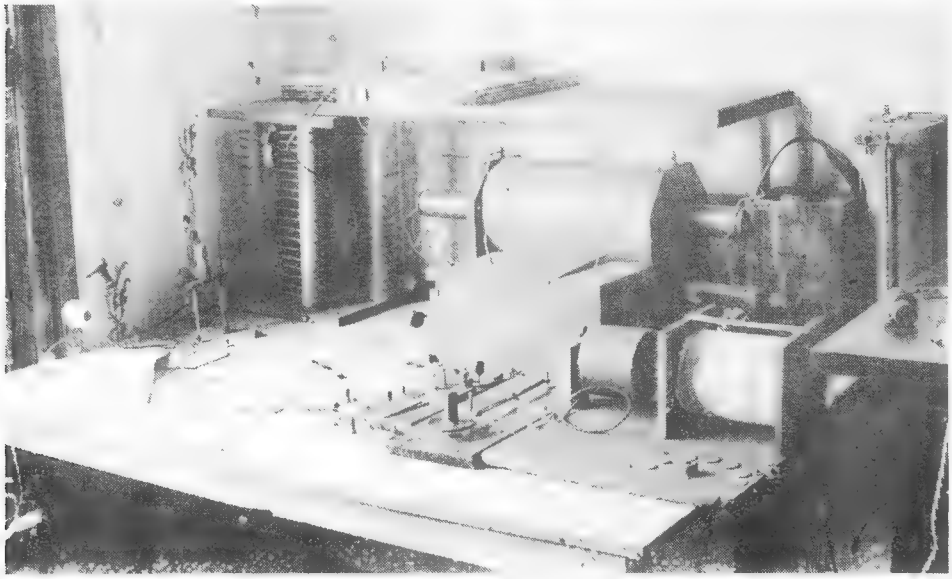
The design of both is very critical to the EMI performance of the PC board. One of the keys to good power distribution is proper IC decoupling. This is accomplished by minimizing the impedance of the decoupling loop to prevent high frequency noise from propagating on the power distribution trace system and, rather, confining it to as small a loop area as possible. To realize these goals, a low loss, low-inductance capacitor placed as close to the IC as possible and connected to the IC by low-inductance interconnects (traces or planes) is generally used. Flat capacitors and capacitive PC board bus bars are ideal for such applications because of their very low inductance. For this reason, they radiate less EMI than do conventional decoupling methods while having the added benefits of compactness and ease of retrofit.

Z5U capacitors can reduce EMI below 50 MHz while providing good low frequency decoupling. More frequency stable dielectrics produce good EMI at higher frequencies but at the expense of less efficient low frequency decoupling due to their lower dielectric constant. A combination of the two types can be used but they should not be placed side by side due to interactions that can negate the benefit of having a capacitor with frequency stability. **AR**

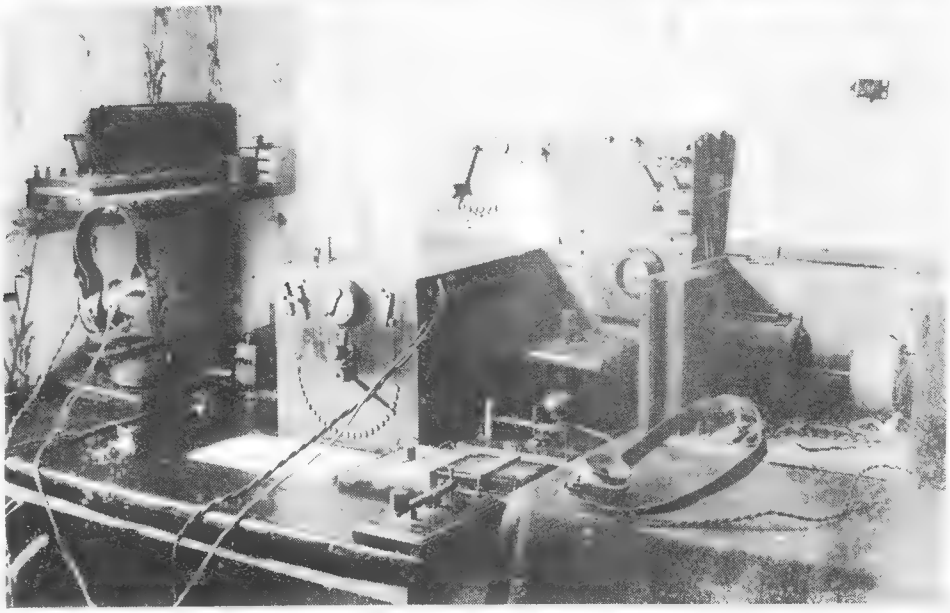
Who? Who? Who?

Peter Brown VK4PJ
16 Bede Street, Balmoral, Qld, 4171

David James Garland



Above and below — some of David's gear.



Who was the first Radio Amateur in Queensland? Was it David James Garland?

My earliest list of radio amateurs from "Amateur Radio" of August 1970, and I commend the article by K Pincott to your attention, shows ten amateurs in Queensland, XQA — M J G Brims (Mareeba), XQB — L Freeman, (Rockhampton), XQC — R H Berry, (Rockhampton), XQD — H A Shepherd, (Rockhampton), XQF — S V Colville, (Sth Brisbane), XQG — G H Gibson, (Brisbane), XQH — H B Rockwell, (Wynnum), XQI — W H Hannam, (Stamford), XQJ — A G Bamfield (Corfield), and XQK — C Wicks, (South Brisbane), as being licensed in 1914.

Marcus Brims, who featured in an early "Thumbnail Sketch", passed on a few years ago and was probably the last of that list . . . *but what of the others?*

David James Garland who was not listed, here or later, was born in 1896 and probably commenced "dabbling" in radio earlier than 1910, while living at Holy Trinity Rectory, Wooloongabba, where his father was the Anglican Priest, who many will remember as Canon Garland a prominent Brisbane churchman.

Notes of David tell that prior to March 1912 he transmitted thirty miles with a spark coil and also communicated with a friend, C L Dunn, by radio about that time.

Although there is no record of David holding a licence at that time, without question, if one was required he would have held one.

The family left Brisbane late in 1912 to live in Wellington, New Zealand, where David's radio activities continued, and involved Wellington College, which he attended, and from whom a letter of commendation on his radio activities is held.

I had the pleasure of meeting David in 1969 (he retired as Chief Engineer of Main Roads in the early 1960s and doubtless influenced Leo Feenaghty) and received from David several items including his NZ license, which was forwarded to our Federal body as at that time we did not have any aspirations in the way of history.

When in NZ World War one was declared and David's station was closed down. David was a member of the Wellington Branch of the NZ Amateur Wireless Association, at that time.

The family returned to Bellevue Avenue, Enoggera about 1915 and David attended Brisbane Central Technical College before joining an RAE Signals group to serve in the Middle East.

A book by Keast Burke, "With Horse and Morse" tells of their activities but I have not been able to locate a copy. I believe that three horses carried the radio equipment and a generator.

After the war David attended the Queensland and Sydney Universities to graduate as a Civil Engineer and thus had little time for radio. Records show that in 1919/1920 David was a council member of the newly formed Queensland Wireless Institute but his active role in radio was finished.

Two of several photos show some of David's gear.

Being a school boy and son of a priest, meant that pocket money was almost non-existent and most of the apparatus was hand made of basic materials. the six inch spark coil weighed twelve and a half pounds and his primary condenser, 9" x 2" x 2" thick weighed eight pounds.

Made in Brisbane they were also used in NZ.

In NZ direct connection to the 100 volt, 60 cycle mains brought complaints from neighbours about the keying fluctuations, and also there was some difficulty in keying the current.

Detailed reference to David's notes, and some of his apparatus, will tell much more of his "wireless" activities.

His son Kel, of recent years became interested in amateur radio but pressure of work reduced activity, except in club nets and on holidays. As VK4AZ he is well known on the Executive Committee of the Brisbane Amateur Radio Club.

Of the listed amateurs of the 1914s we know something of Marcus Brims and Sid Colville *but what do we know of the others?*

Was Rockwell of Wynnum connected with Lytton Fort? and it seems that there was some activity in Rockhampton around 1914. But at this time I think that we must regard David James Garland as being Queensland's first radio amateur. **AR**

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Data Security Equipment
Telex Security
FAX Security Equipment
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COMINT

COMMUNICATIONS SYSTEMS
HF/VHF Stations/Antennas
Telex, Radio Teletype Systems, ARQ, FEC
CW Keyers
Fibre Optics
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Microwave Telephony
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Avionics Pulsed/Power Transistors
Radar Pulsed Power Transistors
Broadband FET Power Amplifier Transistors
Power Amplifiers — Linear
Attenuators — Attenuator Accessories
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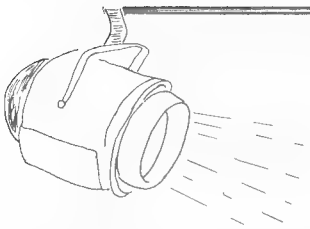
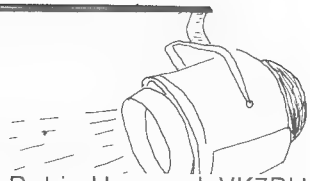


SPOTLIGHT ON SWLing



Robin Harwood, VK7RH
5 Helen Street, Launceston, Tas 7250

1984 is now drawing to a close after a rather disappointing year with extremely poor propagation on the HF bands. The maximum usable frequency (MUF) on many occasions was as low as 12 MHz, and coupled with disruptions caused by solar flares, activity has increased on the lower frequencies. I have been concentrating on these frequencies as there have been some very interesting signals observed, yet the ever-present static from summer electrical storms have now rendered them unusable, particularly in the evening hours.

POOR CONDITIONS

Propagation on the amateur bands has also been very poor, particularly on 15 and 10 metres being devoid of signals. The 20 metre band is usually alive with signals, but propagation has been disappointing with the usual Stateside and European powerhouse signals absent often. I should have expected that the peak we had in 1979/80 would be followed by a deep trough, and I must admit that I have never heard such poor conditions on shortwave as we are presently experiencing

INTRUDERS STILL ACTIVE THOUGH

On the brighter side, the 40 metre allocation has improved and some good signals are observed on both phone and CW. Unfortunately, some utilities and other non-amateur services have also realized that propagation on 7 MHz is good. There has been a marked increase in their activities within the exclusive amateur allocations, in particular the CW portion. This points out the need for amateurs and SWL's to report these intruders to their respective Intruder Watch Co-ordinators, so we can eventually manage to get them to shift to other frequencies.

HF COMMUNICATIONS AND AUSSAT

The experts state that we have not yet reached the trough of the current sunspot cycle that is due for 1985/86. Activity is likely to be restricted to the lower frequencies, I believe, during the coming year. We will also see that satellites and cables will increasingly handle traffic, that was formerly routed via HF, particularly in the developed nations, while other developing regions will still rely on HF communications as being more economically feasible for some time to come. In Australasia, the proposed AUSSAT domestic satellite should cater for the need of some HF users within the region, releasing their HF channels for other purposes.

BETTER ARRAYS

To combat the falling sunspot count, together with congested frequency occupancy, many international broadcasters are improving their antenna arrays. For example, the religious station HCJB in Quito, Ecuador, has already commenced utilizing a steerable antenna to significantly increase their signal level. This new driven element can be used on five bands and takes up 15 acres. The main support tower is 127 metres tall with the seven back support towers being 48 metres high. The diameter of the reflector at the base is 170 metres while the reflector is 75 metres high. There is 29 km of wire in the reflector with 10 km of cables and the total length of the copper ground system is 13 km.

The station says that the steerable antenna will increase a given signal by concentrating the beam in a given area by 150 to 300 times. Yet even though this steerable antenna is in operation, HCJB is still suffering from the declining sunspot count. They consistently were able to put in a fine signal into the South Pacific; 11.925 MHz at 0900 UTC is inaudible with 9.745 MHz severely interfered by Radio Pyongyang broadcasting in Russian. The usually reliable 49 metre outlet of 6.130 MHz has been noted on occasions, lost under a Soviet Mayak network relay. Construction has already commenced on a new 49 metre antenna, the first tower being completed, being 110 metres high. This will improve signals into the South Pacific and Europe.

LIVE PHONE-IN

In October, the BBC World Service started a new series of the live phone-in programmes at 1630 UTC on Sundays. It was not long before the Voice of America commenced a phone-in competition with the "BeeB" at 1709 UTC on the same day. The BBC had a line-up of interesting personalities on a wide variety of subjects; the VOA mainly concentrated on explaining US policies. Other stations have been experimenting with phone-ins such as HCJB and Radio RSA. I wonder if Radio Moscow World Service will ever have a live phone-in? Anyway to us, here in Australia, we have been used to hearing two way talkbacks on our domestic networks for some time, that it is rather old hat.

COMPETITION!

And talking of competition, I have noticed recently that Radio Australia and Radio Moscow World Service are actively competing for audiences in Asia, operating on adjacent channels. For example, RA broadcasts on 21.525 MHz in English, while the more powerful Vladivostock outlet has been on 21.530 MHz for some time now, also in English. When you realize that the majority of receivers within SE Asia would be simple models with minimal selectivity, it is easy to see that the listeners would hear the louder signal. Another instance is RA on 21.720 MHz from their re-activated Darwin site, with RM W/S nearby on 21.725 MHz operational at the same time.

NEW PROGRAMMING

As it is the last month of the year, many broadcasters have special programming around Christmas and the New Year. As I have no details to hand, regarding the timing of these special programmes at the time of writing this month's column, I suggest that you keep an ear out for special announcements advertising the times and dates of the programmes. The BBC World Service has a weekly programme informing it's listeners of the coming weeks fare at 1115 UTC on Fridays and on 21st December details of Christmas/New Year programmes will be heard.

THANKS

In conclusion, I would like to express my thanks to all those who have assisted me in the compilation of this column. In particular Martin Greer, Allen Dyk, Matthew Francis and others, for supplying information to pass on to other enthusiasts. I would like as well to express my thanks to the editorial team at "AR" for their support and encouragement.

May I extend the compliments of the Season to one and all, hoping that 1985 will turn out better than 1984 did. In the meantime, the best of DX and good listening! — Robin.

AR

EDUCATION NOTES

Brenda Edmonds, VK3KT
FEDERAL EDUCATION OFFICER
56 Baden Powell Drive, Frankston, Vic 3199

The end of the year may be a good time to review our achievements in relation to the plans and objectives we had at the start of the year. It may be that we have to reassess those objectives, and perhaps change some of them for next year.

In particular, I would like to suggest that groups running classes collect some feedback from the students as well as from the examiners, and I would like to ask the students to maintain the contact with the class organisers. It is disappointing for the course organisers to be left without any idea of how well the students performed in the vital final exam, but it can be very useful for them to receive comments on areas which the students found more difficult or less well covered.

It can be very profitable to hold a post mortem of the course after the exam is over, when students can look back a little more objectively.

Now that we have four exams per year, some groups may consider rearranging their classes so that students sit for the Novice exam in August, then, carry on for the full exam in November while the material is fresh in the minds.

This may make for a very long 'year' for both students and lecturers. Those who have not been involved in one way or another may not be aware of the time and effort put into the classes by a dedicated few. It is very easy to leave it to the few who are 'good at it' or 'know what they're doing' — but maybe they are good at it because they have been doing it every year unassisted.

Perhaps 1985 will be the year for a few more people to offer to become involved in helping some of the newcomers along the way. Most of us have been helped into this hobby by an enthusiastic amateur who was prepared to share time and interest. Can you make it a New Year Resolution to repay some of this debt by helping a few young ones into some aspect of the hobby.

I would appreciate information about classes for 1985 as soon as possible, as I do get queries about the availability of classes in particular areas.

In return, I'll put the class on the mailing list for sample exam papers as they are produced.

To conclude — congratulations and all good wishes to those who will be collecting a new call sign for Christmas, and the compliments of the season to all.

73
Brenda VK3KJ
AR

WHERE IN THE WORLD IS VK4RSC?

It is located at Maleny, up in the mountains behind the Sunshine Coast. VK4RSC used to be VK4RNC when situated at Buderim and is the 2metre repeater of the Sunshine Coast Radio Club. Its re-location has greatly increased this repeater's coverage. The signal into the Brisbane area is excellent and it is even quite audible in the canyons of Brisbane City, better than VK4RBN, in fact. It is still on 6850.

The 70 cm repeater is also scheduled for relocation to the same site and may be in situ as you read this.

Changing callsigns seems to be the done thing on the Sunshine Coast. The medium wave station at Nambour 4NA now has the callsign 4SS (828 kHz).

from QTC — October '84

RADIO AMATEURS OLD TIMERS CLUB NEWS

THE ANNUAL VICTORIAN Luncheon of the Club was held at the City and Overseas Club, Dandenong Road, Windsor, on Wednesday 26th September. There were sixty three members present, including fifteen from country areas and also two interstate guests, Frank O'Donnell VK2QC and Keith Hutchison VK2DNA. The attendance was the largest at any Victorian Luncheon. Max VK3ZS was, as usual, the Master of Ceremonies.

The luncheon itself was most enjoyable and later Bob VK3ML introduced a special visitor, Janet Hawkins VK3BTU. She is the daughter of the late Bon Guest VK3GG and also a niece of Harry Kinnear who was VK3KN now VK4VJ. She was welcomed by all members and spoke about her entry into the amateur radio fraternity.

Our President, Murray Clyne VK3HZ has decided to stand down after two and a half years of hard work in this office and Max Hull VK3ZS was elected as President. A vote of thanks was given to Murray for his services.

Mac VK3RV, recently returned from abroad, spoke about the advantages and problems of amateur radio overseas and this was very well received. After lunch, conversation was in full flow and a good time was had by all.

The RAOTC, with well over 600 members, is open to all amateurs who obtained their licence at least twenty five years ago. (They need not hold a call sign now). It provides a yearly Luncheon and Dinner, twice yearly Bulletins, on air skeds and monthly net broadcasts. The membership fee is trifling, only $5 for a lifetime. This does not include the annual Luncheon or Dinner, which are charged for at catering rates. Send a self addressed envelope to The Secretary, Harry Cliff VK3HC, PO Box 50, Point Lonsdale, Vic 3225 to receive a membership application form. **JOIN THE CLUB!**

Contributed by Kevin Duff VK3CV
Publicity Officer, RAOTC

MIDLAND ZONE CONVENTION

The Midland zone of the WIA would like to announce their Annual Convention will be held on Sunday 17th February 1985 at Kangaroo Flat Leisure Centre, McKenzie Street West, Kangaroo Flat.

The venue this year has been changed as last year there was not adequate space to allow comfortable surroundings for visitors to the convention.

Please mark this date in your diary and we look forward to meeting all our usual attenders again and extend a welcome to newcomers as well. Full details will be in the usual brochure in February AR.

Catering arrangements will be the same as last year and it is hoped to have the usual trade displays.

The new venue is in Bendigo just off the Calder Highway and close to some of the many tourist attractions available to visitors.

Christmas barbeque

Sunday 16th December from 4pm at the QTH of Don VK3XBL at Mandurang South. BYO Drinks, Salad and Sweet. Meat will be provided. All zone members welcome, please advise the secretary by 7th December to help with numbers.

Contributed by Margaret Loft VK3DML

MOORABBIN AND DISTRICT RADIO CLUB

After a long absence the Moorabbin Award Net is back on air, with Ian VK3DSI as Net Controller. Listen for VK3APC every Monday evening at 10.00 UTC, on 3.565 MHz, plus or minus QRM.

The award is issued on a point scoring system. Club members require 20 points; non-members 15 points; SWL's 8 points and overseas stations 5 points or only one contact with the club station VK3APC.
3 points are scored for working VK3APC.
1 point for every club-member worked.
Cost of award is $3.00.

Contributed by Ian Sinclair VK3DSI

SOUTH EAST QUEENSLAND TELETYPE GROUP SEMINAR

The SEQTG organised and conducted a very successful seminar on 14-7-84 under the title "Getting started on RTTY". The venue was the South Brisbane Technical and Further Education college in Merivale and Russell Streets, South Brisbane. The sixty plus members and others who attended voted the day an outstanding success.

The introduction was given by the President, Doug VK4ADC who also lectured on the modulator/demodulator requirements and design, AMTOR with Store and Foreward repeaters. Other subjects covered were computer software for RTTY, Siemens 100 teleprinter (technical), Packet Radio, Teletypes model 14 and 15 (practical) and modem tuning (practical).

David Brownsey VK4AFA,
Secretary,
SEQTG

Doug VK4AC illustrates a point, during a lecture, on the blackboard.

Below
Instructor Rod VK4KAP shows the workings of a Model 100 Teleprinter to a very attentive class during the RTTY Seminar.

ARE YOU COUNCILLOR MATERIAL?

Would you like to serve amateur radio?
Would you like a say in the running of the WIA?
Are you capable of making a decision and casting a vote?
Would you like to get involved in Wireless Institute affairs?
Would you like your hobby to be more interesting and fulfilling?

If you answer "YES" to all these questions, you are councillor material.

The next question is, can you make it to a meeting each month?

If the answer is still "YES", have a good long think about nominating for the WIA Council.

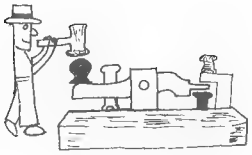
You do not have to be a technical genius, all you need is an AOCP, LAOCP or NAOCP. Ladies are as welcome as men, there is no discrimination in amateur radio.

Of course, if you happen to be a chartered accountant, you know what job you will get! You may have other talents which would help amateur radio. Do not think for one moment, that you will be *allocated* a job.

New councillors very often, are no more than just that, no particular portfolio like WICEN officer, VHF liaison officer or whatever. As a councillor your main job is to consider problems that arise, raise subjects for discussion as you see fit, vote on matters as required. You will find that a council meeting is a very friendly formal evening. A meeting of 12 amateurs with a common interest, of advancing the cause of the members of the Institute.

Should you be interested, please contact your division.

from QTC — October 1984



POUNDING BRASS

Marshall Emm, VK5FN
GPO Box 389, Adelaide, SA 5001

Our local newspaper prints a column called *"What's Your Problem"* every day, in the back of each issue with the comics. I'm not sure the location represents anyone's opinion of the column or its worth, but sometimes one wonders. Here's an example question and its answer, word for word as they appeared in the paper:

"Where can I buy a converter to convert 240watt appliances to 110watt? We are going overseas shortly and want to take a hair curler, shaver and iron. We already have the plug that converts three prongs to two prongs."

The answer — "The iron will work satisfactorily as it is in most places but it will take longer to heat. Assuming the hair curler has a small heating element, the same applies. Unless the shaver has a changeover switch, it will not be satisfactory and you should buy one of the numerous travelling shavers available with a changeover facility on the unit."

"What's your problem?" pretends to expertise in all subjects (the column quoted contained advice on dental and legal matters, preserving ginger, and grafting orange trees!); one would certainly hope that their legal advice is better than their technical advice. Not that their advice is necessarily wrong — it's just that a person who wants to convert 240watts to 110watts and has a prong converter should have been advised to leave appliances at home and take photos instead. It's a good example of the adage *"a little knowledge is a dangerous thing."*

On the principle that a little more knowledge is less dangerous, one of the purposes of this column is to help amateurs and prospective amateurs who have little or no experience as brass pounders, become skilled and effective users of CW. The difficulty is that the skills are hard to come-by, particularly as you are limited to what you can read and what you hear on air. Unlike the local paper, I don't pretend to be an expert in all subjects — not even all CW subjects. But if you have any questions about CW operation I'll do my best to answer them, and this column is always open to third opinions. Please feel free to write at any time — SASE appreciated.

An enquiry from a reader as to the meaning of the expression or abbreviation "QTHR" to mean "my address is OK in the call book" has set me thinking. *What is its origin? Is it R for Roger tacked onto QTH, to mean "acknowledged?" Is it originally a CW usage, or did this one come from phone?* Any reader who can shed more light on this please do so!

On the subject of abbreviations, and education, one of the necessities when it comes to effective CW operation is the appropriate use of abbreviations. Below are some typical usages in the QSO context.

UR FB SIGS RST 5 7 9 ? 5 7 9 . . .

Insofar as U = You, it's no surprise that UR means "Your," or sometimes "You Are." FB means "Fine Business," and is used as a form of compliment. It can be used on its own, as in "FB JOHN, ALL OK," or it can be used as a favourable adjective to describe just about anything, eg, "UR FB RIG ES ANT FB." Signals is abbreviated SIGS, and RST should be immediately recognizable as "Readability, Strength, Tone Report." The ? or IMI indicates a repetition. Except in contest operation, the RST numbers should be sent in full the first time, but N can be used for "nine" in the repeat.

RIG IS FT102 ANT IS GP ABT 20 FT HI . . .

For common rigs the model designation is adequate; there is no need to spell out Kenwood or Yaesu etc. ANT = Antenna, and some common type abbreviations are: GP (Ground Plane), VERT (Vertical), INV V (Inverted Vee), LW (Long Wire), 2EL, 3EL, etc (number of elements). ABT 20 FT HI means "about 20 feet high." And for the record, I use imperial or metric measurements depending on whom I'm working — if in QSO with an American station I use feet and Fahrenheit; the J's get metres and C.

Some other common expressions are used as salutations, such as the classic "CUL" for "see you later," and BCNU (just spell it out loud). The word "good" is frequently used, so it is not surprising that there is an abbreviation for it — "GUD," SRI, CPI, and MI are also often heard, meaning "sorry," "copy," and "me or my" respectively.

One last category deserves special mention — numbers. The old-time telegs (and military CW ops) often had to send long lists of numbers. If you are sending numbers only, and the other operator knows you aren't going to suddenly start sending groups of mixed letters and numbers, the standard form of CW numbers is slow and cumbersome. So a system of abbreviation (or alternative codes) was used, in which 1 was sent as E, 2 as I, 3 as S, 8 as O, etc. About the only forms commonly used in amateur CW work these days are N for nine and T for zero. Some discretion is required, and they should only be sent where the other op is expecting a number. RST 5 N N is pretty obvious, but "SKED AT TNTT" just wouldn't work. In fact, the only time you will normally hear them is in signal reports (5/N/N), contest serial number exchanges, and technical traffic where a lot of 0's have to be sent.

Next month we'll talk a bit about the future significance of CW as a mode, and signal reporting.

73 till then . . . **AR**

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WIDTHS 175, 250, 380, 450 mm.
MAX Hgt 25, 40, 60, 75 metres.
WEIGHTS 1.0, 1.5, 2.4, 3.5 kg/metre.
SECTIONS: Standard; 5.80, 2.90 metres. (19 ft & 9.5 ft). To fit Comet truck!
MAINTENANCE: NIL!! Due to TIG Welding by a certified operator and the use of the best available aluminium in Australia 6063-T83, the greatest strength and corrosion-resistance is guaranteed.

2 Tilt over and crank up towers . . . Early 1985.

3 Parabolic dishes at affordable prices 2, 3, 4, 5 & 6 metre diameters . . . February 85.

4 1, 2, 3, 4 & 5 element high gain beams using lattice tower for booms on 40 metres. Don't miss out on that fine DX . . . October 1984.

5 1, 2, 3 & 4 elements on 80 metres!!! . . . December 1984.

6 Log-periodics from 3.5 MHz and up . . . January 1985 13 MHz and up available now.

7 Range of highest quality BALUNS to 5 kW. 1:1, 4:1 for dipoles, inverted vees etc.

8 On special order, we can design and supply RHOMBIC ANTENNAS including towers, guys, wire, porcelain insulators, terminating non-inductive resistors etc, etc. DEBEGLASS Fibreglass guys 4 and 5 mm dia. 20% stronger than steel cable!!

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VK2 MINI BULLETIN

Tim Mills VK2ZTM
VK2 MINI BULLETIN EDITOR
PO Box 1066, Parramatta, NSW 2150

The festive season is fast approaching and on behalf of Divisional Council and the various office bearers may we wish everyone all the best for the coming season and the best that 1985 can offer.

BIG YEAR AHEAD

1985 is to be a big year from the Institute's point of view as has been mentioned within these pages already. With the formation of the Institute in NSW during March 1910 this Division will be concentrating on activities during March 85 with additional functions during other parts of the year.

HOME BREW!

Are you a builder? The time is getting near to submit that project you have just completed for the annual 'Home Brew Contest'. No, not the drinking kind but the radio project. There are cash prizes for winners and place getters. The awards are made at the Annual General Meeting in March 85. Details of the event may be obtained from your local club, the Divisional office or via broadcast news items. Don't delay, inquire now.

17th February 1985 is the date to set aside for the Central Coast Field Day to be held as usual at the Gosford showgrounds.

ANNUAL GENERAL MEETING

A reminder that the Divisions Annual General Meeting will be held at the end of March. Formal notice is posted to each financial member in early March. The meeting is held on a Saturday afternoon. With the AGM comes the need for reports from the various sub-committees and officials, so start preparing yours now for submission during February. AGM's also mean the election of a new Council. Seven persons are required and there will be some spaces to fill this time due to the commitments of some of the present Council being unable to stand for a futher term. Council nomination forms available from the Divisional office.

RENEWALS AND QUESTIONNAIRE

The fees for Membership for the 1985 year — the Institutes year is Jan 1 to Dec 31 — have been set. The Federal content rose by $1.50. At the October Council meeting it was decided that the Divisional content would remain unaltered but that we could not absorb the Federal increase. Accordingly all fees had to be increased by the Federal component. By now you all should have received, from the Federal office, your renewal notice as well as a questionnaire. Please complete and return as soon as practical. If there is any reason that you are not in a position to renew please advise, as sending subsequent reminder notices just adds to the cost. All renewals are handled on behalf of Divisions by the Federal office at PO Box 300, Caulfield South, Vic 3162

SEMINARS

The Council intends to hold further Seminars during 1985 following the success of the one held last September. With a crowded beginning to the year it appears that a weekend in May 85 is the likely date. Speakers and subjects are most welcome, please advise the Divisional office if you can help. Write to PO Box 1066, Parramatta, NSW, 2150 or ring (02) 689 2417 between 11 am to 2 pm Monday to Friday or 7 to 9 pm on Wednesday.

HOLIDAY TIME

Divisional broadcasts will terminate during the Christmas holiday period. The last session for 1984 will be Sunday the 16th December. They are expected to start for 1985 on Sunday the 13th but the final advice will be given in the broadcasts

BOOKS FOR CHRISTMAS?

By now the stocks of the 1984/85 Call Book will have run out at the Divisional office. There was a heavy demand for this years edition. However, there is a good range of amateur publications available so if you are looking for a Christmas gift then leave a copy of AR open at this page with this item marked. Somebody may take the hint. A SAE to the office will obtain a current book list. A further note. There are new stocks of some of the preprinted QSL cards, including small packs of twenty five in single or assorted colours. If you need some cards, for say AX contacts then these may be the answer. For award purposes you cannot cross out the VK prefix and hand write AX in. Some award managers treat that as an altered card. Instead get a few of the preprinted cards and make up a rubber stamp for your callsign. While on the subject of QSL cards. Keep the Bureau at PO Box 73, Teralba, NSW 2284 advised on any callsign changes you may have, including the date of change. If you are new to QSLing remember that it can take up to six months, more often a year before cards do the circle round the loop. If you have just worked the world and have filled out your first cards and sent them off to Teralba they are sorted into country of destination. It is then a three months sea trip to that country, perhaps a couple of months reaching the person you worked for them to complete and return to their bureau, a card. A further three months back on a slow boat and then back to you. Allow time for the returns. If you would like to know anything about the bureau or to update your details write to Box 73, Teralba.

ANTI-SOCIAL

Amateurs within Sydney are aware of the anti-social behaviour on certain repeaters. If you have listened to broadcasts you will be up to date with reports about the problem. The Department has spent a great deal of time investigating the matter. To track down the offenders they need your co-operation. Besides being an offence against the regulations do not engage in any on air contact with the offenders. Don't decide that you have had enough and run a signal to jam out the problem. You might find yourself in the round up. Report any information you may have to the Department of Communications PO Box 970, North Sydney, NSW 2060 or telephone (02) 922 9111.

TELEPHONE INTERFERENCE

A problem which appears on the 2 metre band from time to time is an illegal high power telephone extender system. See August AR. The Minister for Communications released a press statement that various forms of non approved cordless telephones had become prohibited imports. This caused various sources, who had imported such items, to dump them at reduced prices on the market. They come in several versions. The ones that affect our bands have a base station transmission round 6 metres and a mobile end in or near the 2 metre band. There are several in use, particularly in country regions. They are easy to track down. Just record the dialing impulses and decode the number called. Those on 2 metres are usually found above 146 on the 25 kHz repeater input steps. Like any other intruder do not contact the parties involved. Just note the information and pass it on to the Department. They usually only last a few days before location and termination of their operation

Again to one and all. Merry Christmas and a Happy New Year. **AR**

FIVE-EIGHTH WAVE

Jennifer Warrington, VK5ANW
59 Albert Street, Clarence Gardens, SA 5039

Why is it that things seem to get busier at this time of the year? By the time you are reading this we will have had a three day portable station at the Electronics Exhibition at Morphettville Racecourse from 2nd -4th November and two weeks later the WIA Picnic at Bridgewater Oval.

NEW CLUB ROOMS AND NEW OFFICE BEARERS

In Darwin they will have held the official opening of the new Clubroom/Antenna Farm on the 24th of November and hopefully part of the opening ceremony will have included talking on air to our President Dick Boxall VK5ARZ — if propagation permitted. I am sorry that I did not receive this information in time to go into the November issue but we certainly wish all the Darwinians a long and happy association in their new HQ. The Alice Springs Club have had a change of office bearers at their AGM, the President is now Jeff Tong VK8TJ, Vice President Peter Sumner VK8ZLX, Secretary Brian Austin VK8NBA and Treasurer Ron Cottam VK8NRC.

Another club which has had a change of some of its office bearers is Lower Eyre Peninsula (better known as LEPARC). Their new President is Carol McKenzie VK5PWA (the first lady president of any club in VK5 or 8, as far as I know), Vice President is John Plevin VK5AEP, Secretary Jack Kleinrahm VK5AJK and Treasurer is Ian Philips VK5NIK. Their club is already gearing up for Jubilee 150. Their twin city in Texas is Orange, and already they are arranging scheds and plan to get the Mayors of each city talking via amateur radio, also the various Service Clubs talking to each other.

NEW VOICE

At the end of this year when the Sunday morning Broadcast goes into recess for the usual holiday period, we shall be saying goodbye to the familiar voice of Chris Whitehorn VK5PN, at least on a permanent basis. Chris has decided that it is time to hand the mic to someone else and the new voice will be that of Peter Barlow VK5NPC. To Chris we say many thanks for the tremendous job you have done, and to Peter every success, it won't be easy having to follow Chris!

SIXTY ONE YEARS OF HISTORY

Someone else to whom we owe a great debt of thanks for many hours of slaving over a hot typewriter, is Marlene VK5QO who not so long back presented the Division with a History of the Division from 1919-1980. Quite a feat, as you will see when we get some copies made and can display it.

Don't forget that this month's meeting is on 11th December in the Thebarton RSL Hall at 8.00pm. The speaker will be Mr Ray Wood from the Jubilee 150 Committee and representatives from DOC and their wives will be present. Don't forget to bring your YL or XYL (or OM!) and also a plate of supper.

Finally, I hope you all have a Happy and Safe Christmas and New Year. **AR**

VK3 WIA NOTES

Jim Linton, VK3PC
DIVISIONAL PRESIDENT
VK3 DIVISION

VICTORIA 150

Photographs by John Hill VK3WZ

WHO DOES WHAT LIST (NOT EXHAUSTIVE)?

A number of people have specific tasks and areas of responsibility to help your division function. Without them many of the activities and services provided by the WIA would not be possible.

Below are the names of most of those appointed by the Vic Div Council to carry out particular jobs.

Office-bearers:

Council Chairman/Vice President — Bill Wilson VK3DXE
President and Public Relations — Jim Linton VK3PC
Secretary/Treasurer — Des Clarke VK3DES
Federal Councillor — Alan Noble VK3BBM
Alternate Federal Councillor — Des Clarke VK3DES

Ex-officio.

Broadcast Committee Chairman — David Johnson VK3YWZ
VTAC Chairman and Repeater Co-ordinator — Peter Mill VK3ZPP
AR *Liaison Officer — Jim Linton VK3PC*
Inwards QSL Bureau Manager — Barbara Gray VK3BYK
Outwards QSL Bureau Manager — Des Clarke VK3DES
Library/Historical Officer — John Adcock VK3ACA
Museum Station Officer — David Johnson VK3YWZ
Classes Organiser — John Adcock VK3ACA
Intruder Watch Co-ordinator — Steve Phillips VK3JY
Disposals Officer — Fred McConnell VK3BOU
Administrative (Office) Secretary — Maxine Conheady
Council News Co-ordinator — Bill Wilson VK3DXE
Education Officer — Fred Swainston VK3DAC
National Parks Award Manager — Peter Barclay VK3FR
Vic 150 Award Manager — Jim Linton VK3PC
WIA 75 Award Manager — Jim Linton VK3PC
Victorian Awards Manager — Greg Williams VK3BGW
WIA 75 RTTY Comp Co-ordinator — Fred McConnell VK3BOU
Book Officer — Lindsay Rohrlach VK3KAF
Immediate Past President — Alan Noble VK3BBM
Zone and Club Net Controller — Marilyn Syme VK3DMS
Minute Secretary — Margaret Wilson
Stolen Equipment Registrar — Len Greaves VK3BGM

The holders of some of these positions are representatives of committees or groups.

For example there's the Broadcast Committee, RTTY Fixers Group, Victorian Technical Advisory Committee, and WICEN.

Three class instructors plus revision weekend teachers support the Education Officer in carrying out the Institute's education role.

The sorting of cards for the Inwards QSL Bureau is done by several willing hands.

Hardly an activity of the Institute isn't assisted by the band of volunteers who man the Wireless Institute Centre five days a week.

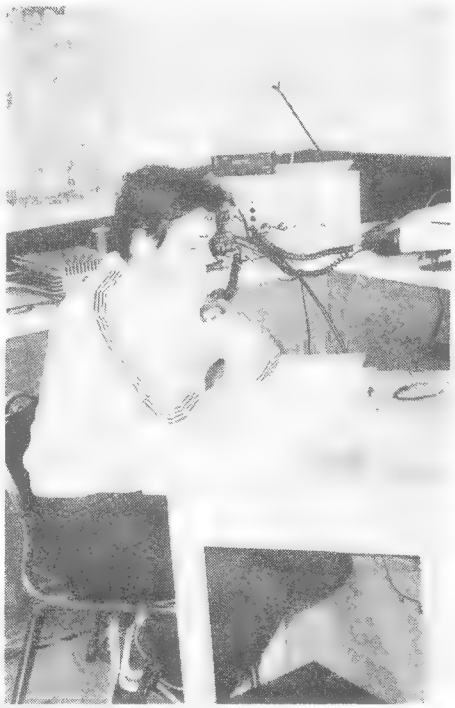
Another small but keen group of members is supportive of the WIA public relations campaign by attending the Melbourne exam centre to hand out printed material on classes and the Institute generally.

Two members with photographic equipment have also made invaluable contributions to the AR Liaison Officer and Public Relations Officer.

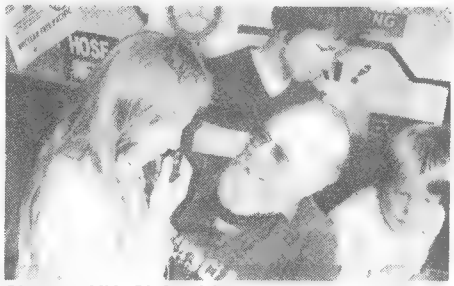
Let us not forget the important role of country WIA representation done by our Zone Committees.

Despite the apparent army of members doing their bit for the Institute, more help is needed — volunteers should contact either the Vic Div Secretary or their local Zone Committee.

It's impossible in these notes to name everyone already involved in helping the Victorian Division — but on behalf of all members a sincere thank you.



David VK3YWZ reading the broadcast.



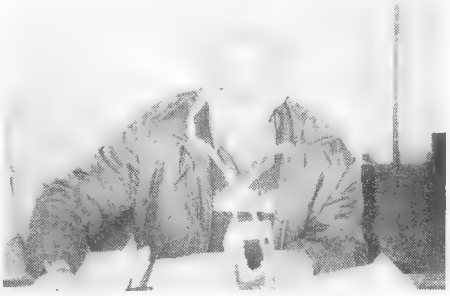
Chester VK3CLA with an eager audience at VK3SCD. Chester was in charge of the VHF set-up over JOTA.

BROADCAST NOTES from David VK3YWZ

After the success of the Special Broadcast of 12 December, 1982, the Victorian Division Broadcast Committee had been looking for another occasion to try a broadcast with ATV. In conjunction with the 1984 Jamboree on the Air, it was decided to attempt this, with demonstrations to Scouts over the JOTA weekend. The failure of the Melbourne ATV repeater transmit antennas precluded the attempt, but some local closed circuit demonstrations of TV were provided at VK3SCD, the Scouting Station of the Cheltenham District.

The Sunday morning Broadcast went to air, as planned, from VK3SCD. Over the previous evening, the broadcast had been transcribed onto Model 100 punched tape, and a RTTY broadcast went to air simultaneously with the voice broadcast. The voice broadcast was relayed from 2 metres by the Museum Station VK3BWI, and RTTY went to air on the Melbourne RTTY repeater, and on 40 metres.

The mornings's callbacks reported 100 percent copy from as far away as Mildura, and good audio signals throughout the state. A videotape was filmed of the broadcast, and this is soon to be edited and held in Divisional records for future regular ATV broadcasts.



Ron VK3PRT taking the 80m call back.

Ted VK3DEH video taping the broadcast. Ted is the author of the popular Bill Blitheringtwit series in AR.

QSP

"TVI LINE OSCILLATOR" INTERFERENCE SURVEY

The National EMC Advisory Service would like to hear from any amateur radio operator, shortwave listener or other interested person who is suffering interference to reception from TV receivers or associated equipment.

Survey co-ordinator Mr Allan Doble VK3AMD, (with the co-operation of the RAAF Net) would like to receive as much information as possible, essentially: amateur bands affected, strength and type of interfering signal/s, make and model of offending TV receiver, type of TV feeder, distance between TV and amateur antennas.

Please direct your reports to ITV Survey, PO Box 300, Caulfield South, 3162. **AR**

Note: Federal Executive is already addressing the amendment of Australian Standards on TV RFI limits. See AR Jan. '85 for further details.

VK4 WIA NOTES

Bud Pounsett, VK4QY
Box 638, GPO, Brisbane, Qld 4001

GOLD COAST SOCIETY STRIKES GOLD

That old adage, *"It never rains but it pours,"* is very true when applied to the Gold Coast Amateur Radio Society and October. First the Society received a grant from the Gold Coast City Council of $200. Then the Commonwealth Games Foundation came to the fore with a wonderful $3000.

The $200 grant was for the upkeep of the Society's VHF and UHF repeaters located on Tamborine Mountain. This was in recognition of the important part played by amateurs in a variety of emergencies and incidents in the recent past. It is very gratifying that the city fathers have shown their appreciation in such a concrete way, of the role of amateurs in helping their community in time of need.

From the Commonwealth Games Foundation came the very substantiial gift of $3000 to assist the Society to finish their building and to further the education of aspiring amateurs. It says much for the case put up by the Society and the confidence of the Foundation that the Society would spend the money in a worthwhile way. There is no doubt that, as shown, by these two grants, amateur radio operators in Australia have earned the respect of their fellow citizens.

DISTANCE NO OBJECT

Again two groups of Queenslanders have gone out of their way to meet one another. This time a group of amateurs from MacKay and another from Rockhampton met, more or less halfway, at Clairview, just north of St Lawrence, for a weekend get-together. In all, some fifty five people, amateurs and their families met at this place, which is one of the few places on our east coast that train travellers get to see the Pacific Ocean. What a wonderful way to combine amateur radio and family enjoyment. *Who will be next?*

ANOTHER REGIONAL 2m REPEATER

Roma and District Amateur Radio Society have their 2 metre repeater up and running. It is currently in the testing stage at a temporary location before being shifted to a permanent site some 20 km north east of Roma. This will provide good coverage of Roma and the Warrego Highway to the east and west. The callsign is VK4ROM on Channel 6650 (146 650 MHz output, 146.050 MHz input)

AR

TECHNICAL CORRESPONDENCE

Lindsay Lawless VK3ANJ,
Box 112, Lakes Entrance, Vic. 3909

BEAMS WITH HELICAL ELEMENTS

Len Fracek VK8LF has asked me for information about the design of beams using helical elements. It is possible that other members are interested in the same subject and can contribute informaiton additional to my thoughts on the subject. Len has tried John Drew's programme on his Apple II E and it appears to run OK. (see AR Sept 84, p 11).

I have not attempted the design or construction of a beam with helical elements but I have had reasonable success with dipoles. The helical dipoles theoretically have low radiation resistance and I expected to be in trouble matching to 50 ohm feeder but this was no problem; I suspect that the loss resistance of the winding made up the difference. My main problem with helicals is the comparatively narrow bandwidth (less than 1 percent). This is no hardship at 14 MHz and above but at the lower frequencies it's like being "rockbound"; to cover the complete band it is necessary to adjust the tuning tips at every change of frequency.

I believe the design of a beam would be straightforward; the driven dipole would be two monopoles designed using John Drew's programme or any other method of solving the formula in my articles. The director would be similar but designed for about a 10 percent higher frequency, the reflector could be the same as the driven dipole but with added tuning tips to tune to a lower frequency and for best front to back ratio. Matching the beam to a 50 ohm feeder would be a big problem; any matching at the antenna end would reduce the bandwidth further and you can't climb the pole for every frequency change. The easy way out would be to use tuned feeders and match to the transmitter with an ATU; that would foul up front to back ratios but may be tolerable. If tuned feeders and an ATU can be tolerated a helical version of the end fire arrays (G8PO etc) described in Rob Gurr's excellent summary of wire antenna (AR 9/84) may be the best solution. I don't know of any reason why helicals would not perform well as parasitics but if they don't, driven arrays would be the only solution.

It should be noted that the statement for P3 at line 00270 of John's programme will calculate an approximate total length of wire which would be too short if the winding pitch (1/N) is significant. The complete formula for wire length is $NH\,[(\pi D)^2 + (1/N)^2]^{1/2}$.

John Drew may be interested to learn that I am one of the minority of amateurs battling along with only a scientific-calculator; it's not because I am "agin" personal computers. I intend to buy one as soon as my trusty HP33 turns up sufficient of the Saturday night "Tattslotto" numbers with its "random number" programme. I have also bought a ticket in the Vic Div Eastern Zone Repeater Fund raffle of a Commodore 64.

AR

"CQ — A NOSTALGIC LOOK INTO WHAT MANY TAKE FOR GRANTED

John Kelleher VK3DMZ

4 Brook Crescent, Box Hill South, Vic 3128.

The following article is a precis of historical events with explanations to the signal character "CQ".

Nearly a century ago, before the invention of radio, English telegraph operators used the procedure signal "CQ" as a general call meaning "all stations, a notification to all telegraph offices to receive a message". "CQ" was used to precede notices of general importance, disasters, and the daily time signal at 10.00 am.

The Marconi Company recruited many of its operators from the telegraph services, and the practices and customs of telegraph passed into radio communications. Consequently, "CQ" was then used as a general call to all ships operated by the Marconi Company with their radio equipment aboard.

Early radio operators found they needed a more distinctive signal for notifying distress, so the letter "D" was added to "CQ" to indicate "danger" or "distress". In popular literature of the time, fanciful writers said this meant "Come quick, danger". Actually CQD meant nothing, nor does the present distress call SOS have any meaning. Both signals were adopted because they were easily recognised and remembered.

Discussions were held at the Berlin Convention in August 1903, in an effort to generalise radio procedures, particularly in regard to distress. The conference adjourned without unanimous agreement. The 1906 Convention, again in Berlin, was more fruitful.

The Italian delegate suggested SSS DDD as a distress signal. The American delegate suggested NC already in use for International Visual signalling. The British favored CQD. The Germans wanted SOE. The conference found SOE acceptable, except that the final E could easily be lost in QRN, so the letter S was substituted, making it SOS, to be sent as a single code character, thus arresting the attention of anyone hearing it!

The Marconi Company officially had adopted CQD as a distress call in 1904, but after the 1906 Berlin Convention, SOS was adopted. However CQD was heard for several more years. When the ship "Republic" rammed the ship "Florida" in 1909, radio operator Jack Binns sent CQD to get help. In 1910, the "Wellman Airship" sent a distress call, and all aboard were saved from death by the RMSP "Trent" on her way to the West Indies. When the unsinkable "Titanic" went down in April 1912, radio operators John Phillips and Harold Bride sent both CQD and SOS.

The first recorded distress call was made on 3 March 1899, when a freighter rammed the East Goodwin Sands Lightship.

In modern practice CQ retains the original meaning — "A general call to all stations". Ships and shore stations send CQ before transmitting weather reports, traffic lists, or press reports. In the amateur service CQ is an invitation to other amateurs to answer.

Radio communication is a comparatively recent development, but CQ is older than radio.

References: The Radio Amateurs Operating Manual — first edition and the 1917 Year Book of Wireless Telegraphy

AR

LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

SHIPS AND BOATS, ETC!!

As a former ships R/O, many years retired, I have always maintained a great deal of nostalgia for the Great Liners of yesteryear and thought the following may be of interest to some of the "Old Timers" who had a similar vocation.

I have recently acquired coloured reproductions from Merseyside of the original paintings of the RMS Mauretania (1907. .1935) and the RMS Titanic (1912) size 29 by 19 inches, which show in great detail, the Mauretania looking lively in the Western Ocean, and the Titanic leaving Belfast, escorted by three tugs for her sea trials.

These prints are produced by the well known Marine Artist ED Walker in Liverpool (UK) and are ideal for framing as they are produced on top quality paper.

The cost of each print is $30.00 post free in Australia and I would be pleased to pass further information on to interested members should they care to write to me or telephone on 08. .791845.

Kind regards.

Bob Clifton VK5QJ
4 West Terrace,
Beaumont, SA, 5066

AR

DX WITH CW

Articles and letters have been published in Amateur Radio on the subject of learning Morse code but when the time comes for the new operator to work on the HF bands he has to rely on his own resources, having had no training about working under operational conditions.

Some of those newcomers, after trying for a while, decide they cannot possibly read Morse at those speeds and under QRM, so resort to SSB contacts or perhaps the occasional CW QSO in good conditions and with strong signals both ways. That these operators are missing so much of interest is not apparent to them at the time but there is little doubt, if some were to try harder, success would come in the end.

The crucial need is to practice the use of maximum concentration which is necessary to enable them to draw on the knowledge stored in the memory about previous conditions. Of course those making the first attempts have no previous experiences to remember, but if they persist, they will find that previously unreadable signals become readable.

We are all different and some operators progress faster than others. This difference was brought home to me in the last war. During those years, radio contact with Europe from England had to be maintained by the operators in Europe working from concealed situations, such as cellars, and caves, using small aerials and low power.

The signals received in England were almost always of a weak strength and many times under heavy QRM. In spite of this it was vital, in order to lessen time on the air, to receive messages without asking for repetitions. The longer they were operating, the greater the risk of them being found by the enemy direction finding stations.

Some of the UK operators were from amateur ranks, but most were recruited from the services and were qualified radio operators. Under normal conditions with good signals and clear conditions they were capable of operating efficiently, but I soon found that some were quite unable to pick up the weak signals and even after the wanted station had been tuned-in for them they could still not copy the messages. These people had obviously never had experience of operating under difficult conditions.

To deal with the question of speed, it is not necessary to send faster than you can read and if you tune around the band, select someone who is calling CQ at the speed you like, and try to contact him, using the same speed or a slightly slower speed. I approach contacts on the amateur bands as I would a chat with anyone in the normal way. The main consideration is to work at a speed that will ensure both understand what is being said. The station you are working may have given you a report of R5, but at some time during the QSO you may notice he is a fraction slower in coming back to you. That sometimes means he has come up against local QRM or even changed conditions and does not like to alter his original report of R5. Try in that case to send at a reduced speed and you may be able to help complete the QSO.

If you work regularly on the HF bands, you will find that you can recognise some stations by their style of sending. Morse, like handwriting, if sent on a straight hand key, bears characteristics peculiar to the operator. Reverting again to my war time experiences, there were occasions when the operator in Europe had been captured and made to continue working but under enemy control. If that fact was known to us in England we would be asked to say if we thought the operator was the original one, and if we had worked that station often enough we could usually make a correct decision.

Even in these days of semi or fully automatic keying, it is possible to get to recognise some stations even before they use their callsigns.

With our HF bands increasingly at risk of being used by other services, one of the best ways we can try to keep our allocations is to use the bands fully. I am sure that if many of those who have given up trying Morse would join in a few sessions working DX under the supervision and help of one of the many successful operators, tips would be picked up and from that point progress would be made. If that happens, you would never look back, but would be able to experience that special feeling of satisfaction after completing a successful DX QSO under difficult conditions.

Norman Richardson VK4 BHJ, exG5HJ
1069 South Pine Road,
Everton Hills, Qld, 4053

AR

NOT IN CONTROVERSY

I shall be grateful if you will correct an error in the October issue.

A letter, under the heading "The ATN Exists", is signed David Bell VK2BDT. The call sign was allocated to me in 1970 and is still used by me. The error is particularly unfortunate as VK2NAW, who has been associated with me over many years, is also David Bell, not the author of the subject letter.

Both VK2NAW and myself would like it known that we are not involved in this controversy.

Yours faithfully,

David Thompson VK2BDT,
"Marama",
Box 350,
Goulburn, NSW, 2580

AR

JAMBOREE-ON-THE-AIR

With the difficult radio conditions at the bottom of the eleven year sunspot cycle, it was indeed refreshing just to listen to HMAS CASTLEMAINE moored alongside Gem Pier at Williamstown, Vic.

VK3RAN is not a repeater call sign. It is a corvette of the Royal Australian Navy — or used to be! You might say it is almost owned and operated by Margaret VK3QU, herself an ex-Navy radio telegraphist. It is Margaret who keeps firing up the little radio office that minesweeper telegraphists knew so well during the war. Margaret was of course a WRAN.

Full marks go to her for conducting some very interesting JOTA sessions this year. Her comments and especially her questions to motivate the Guides and Scouts milling around her in the tiny radio office of HMAS CASTLEMAINE, at once put them at their ease. She was getting the most out of these kids who were no longer microphone shy.

This is communication. It sounded just great from the receiving end.

Alan Campbell-Drury VK3CD,
10 Colchester Drive,
East Doncaster, Vic 3109

AR

AUTHOR REVEALED

On Page 42, of July 1984 AR, there is an article "Advice to Fair Maidens." I wonder if readers would like to know who wrote this originally?

I wrote this (as near as I can guess) in 1954 for use in the Auto-Call which I published at that time for the Foundation of Amateur Radio in Washington DC. It was picked up by an Amateur Women of South Africa organization but no credit was given to me for the article. Since that time it has appeared in a great many publications but credit has been given to South Africa! Then the credit disappeared entirely. Maybe I should have copyrighted it since it has appeared a great many times in various publications.

Another article (with which I have no connection) often appears in newsletters here in the USA which concerns the origin of the word "HAM". It goes on to tell about three amateurs (whose initials form the word Ham) meeting with a Congressional Committee relative to amateur radio. The ARRL had run this one down and proven it a fake because the word Ham was used long before this supposed meeting and the ARRL could not find any record whatever of such a Congressional meeting! Yet the article surfaces at intervals.

I enjoy your magazine greatly and I often quote from it in my ARNS Bulletin. I'd love to visit Australia some day but with my age and physical condition, all I can do is dream about it! 73.

Andy Anderson, K0NL
528 Montana Avenue,
Holton, Kansas, 66436. USA.

Many thanks for taking the time to enlighten us, Andy. We are pleased to finally recognise you.

AR

BEST WISHES

I personally think Amateur Radio magazine is very good, in fact excellent. I get quite upset sometimes after reading and hearing of criticism of the WIA and AR magazine.

I know, being a media person, that you all put a lot of precious time into it all. I look forward to AR each month, as it exemplifies the true spirit of amateur radio.

Your faithfully,

David Thompson VK2NH,
66 Duffy Avenue,
Thornleigh, NSW 2120.

AR

AMATEUR RADIO TRIP

This is a report on amateur radio as experienced on a recent trip around Australia by my Manager of Household Affairs (wife Elaine) and myself.

Time of year: 22nd June — 9th August.
Distance travelled was 15,000 km plus.
Vehicle was a Toyota Camper Van.
Rig was an FT707 and the only antenna used was a homebrew Helical tapped for various HF bands and

mounted on the bull-bar. A spare antenna (with mount) was taken in case of damage by low flying obstacles but fortunately, was not needed.

20 metres was as could be expected, a most useful band and great credit and thanks must go to Art VK6ART and his friends for their dedication to the Travellers Net, a service much appreciated by many amateurs who travel. Apart from the period when we were in the skip zone or for some reason, not near our vehicle at Net time, we were always able to communicate with Art.

Amongst lots of activity on 15 metres and in spite of poor band conditions much of the time, we made many contacts back to our home corner of VK4 from just north of Alice Springs, Kakadu National Park, Darwin and from Katherine across to Broome and down the west coast to Cape Leeuwin and across the bottom to about Port Augusta. The most difficult area seemed to be between Port Hedland and Geraldton. 17 metres could well be a superior band for these conditions but we experienced a shortage of contacts to carry out adequate tests.

80 metres was a surprisingly useful band in the mornings and evenings. Besides many other contacts we made it quite well to SE VK4 from Alice Springs and Ceduna.

40 and also 30 metres went well during the mornings at distances to about 2,000 km — sometimes further.

On all bands used, signals to and from our mobile station seemed best on the sides and in particular, the rear of the vehicle. I often turned it around to take advantage of this.

Interest in and, at times, concern about our welfare and whereabouts was obvious and greatly appreciated.

Our most sincere thanks to all amateurs who extended hospitality, friendship and help and also to those who kept us company on the bands while we travelled.

The photograph is of the antenna used and in case anyone happened to notice the YL's in the picture are L to R Kathy Thomson, Kylie Smith and Debbie Smith.

Roley Norgarrd VK4AOR
"Eden Farm" MS 222
Oakey, Qld. 4401

RTTY, INTERFERENCE

I have recently become active on the HF bands using RTTY. This has opened up a new field of interest for me and has enabled me to combine the two hobbies of radio and computing. In the short time that I have been on RTTY I have made some new friends and renewed old acquaintances with amateur friends who have also become active on that mode.

I have noticed that from time to time RTTY transmissions, particularly on 80 metres, seem to be subject to deliberate interference. This has not particularly bothered me until the evening of 18 September while attempting to copy the VK3TTY broadcast on 3.545 MHz. I tuned to the frequency about ten minutes before the broadcast time and set up the RTTY gear in preparation for the broadcast. Two stations were having an AMTOR contact on the frequency which ceased about two minutes before the broadcast, which commenced at 8 pm with a clear frequency.

Shortly after commencement of the broadcast it became subject to severe interference. On switching in the SSB filter I was able to copy some VK2 SSB stations without retuning. They were perfectly aware of the RTTY transmission because they made reference to it in their conversation. The interference persisted for the whole of the broadcast. At times during the broadcast another station, operating a Keyer, was swinging his signal back and forth across the RTTY transmission.

At the conclusion of the braodcast, during the callback, occurred one of the most appalling exchanges I have ever heard on amateur radio. Some VK2 stations came up on the callback abusing the control station. The abuse included the use of bad language. The control station operator remained calm and tried to explain the situation, but to no avail. While this exchange was taking place our friend with the Keyer was at it again, and another unidentified station was whistling "Colonel Bogey" over the top of everything.

This display of intolerance has greatly disillusioned me and I am only glad that none of my non-amateur friends were in the shack at the time. As a new RTTY operator I am at a complete loss to know why there is so much hostility to the mode.

This sort of behaviour can only do our hobby great harm and cause the authorities to impose greater restrictions upon us. I ask for more tolerance from all amateurs, and if your favourite frequency is in use when you wish to start your net, then move up or down the band a little. I will continue to operate RTTY, but I am sadder for the experience and I am wondering just what sort of people we are getting into our ranks these days, and where our hobby is heading.

Yours sincerely,

Kevin L Feltham VK3ANY,
PO Box 478,
Moe, Vic, 3825

RECIPROCAL RADIO MAGAZINES

Unfortunately, radio conditions are becoming poorer and we no longer hear the loud signals from VK-land in the early mornings here, although we still get through on occasion.

We thank you for sending us every month your fine magazine AMATEUR RADIO and Bill Orr and I read it with interest before passing it along to others. You do a truly excellent job in balancing editorial content between the various aspects of amateur radio, in fact, in our judgement you do a more balanced, better job than our amateur magazines here!

Thanks again and best wishes.

Sincerely,
Stuart D Cowan, W2LX, KM2XDU
Radio Publications Inc,
Box 149,
Wilton, Conn. 06897, USA

KERMADEC

In reply to ZL1AMM (Letters, AR Aug 84) I must agree. Let everyone interested in DXing obtain a copy of the material. (*Note. The reference is to page 2 of Break In for March 1984. Space limitations preclude reproduction, but it includes a letter from NZART to Department of Lands and Survey dated 7 Nov 83 which,* inter alia, *suggests that NZ operators should be given preference. Ed*). As a result of this input several months of negotiations were almost negated.

In correspondence Lands and Survey indicated they were the authority for permission. At no time was it suggested that Heard Island DX Association, contact NZART. The HIDXA application was for ZL1's AAS, AMO, BQD and myself forming the amateur radio component. HIDXA made the initial approach to Dr J L Craig on recommendation of Lands and Survey. It was agreed that amateur radio take second place. The joint expenditure would be seen to be NZ led and this agreeable to Lands and Survey.

Permits were issued jointly and conditionally to Dr J L Craig and J B Smith (Norfolk Island) and three ZL amateurs. (*VK9NS has supplied to me a certified copy of the letter covering the permits, dated 15 Dec 1983, in which he (J B Smith) is personally named conjointly with Dr Craig. Ed*).

I pulled out . . . (due to) . . . lack of cohesion in the amateur group. HIDXA acknowledges the courtesy and help received from Lands and Survey which resulted in a permit being issued. As a result the joint expedition took place, and Kermadec was activated in an amateur radio DX pedition sense.

Jim Smith VK9NS/ZL1BUN
Norfolk Island (In the Tasman Sea)

BIG WIDE WORLD

The pupils of Bundeberg's Norville Primary School are looking to new horizons with the assistance of amateur radio.

Since September 1981, with the callsign VK4VHS, over 300 contacts have been made with about thirty countries. Contacts with Russia's top-secret base Sakhalin Island and the Johnson Space Centre in USA are almost an everyday occurrence.

Amateur radio at the school was the brainchild of a relieving teacher, Peter Barns, in 1980. Through his submissions a donaation of $970 was received under the Commonwealth Schools Special Projects Programme. Another $400 was received in donations and $250 was raised by the pupils.

The principle aims of amateur radio was to broaden the children's concepts of the world around them, geographically, socially and culturally, as well as helping them to communicate.

Worksheets are used by the children to enter data relating to customs, clothing, climate, seasons, housing and time zones of the amateurs they talk with. QSL cards are exchanged, also letters, postcards, photographs and stamps.

The school is assisted by two local amateurs, Bob Milgate a retired bus driver and Ken Doessel, a parent.

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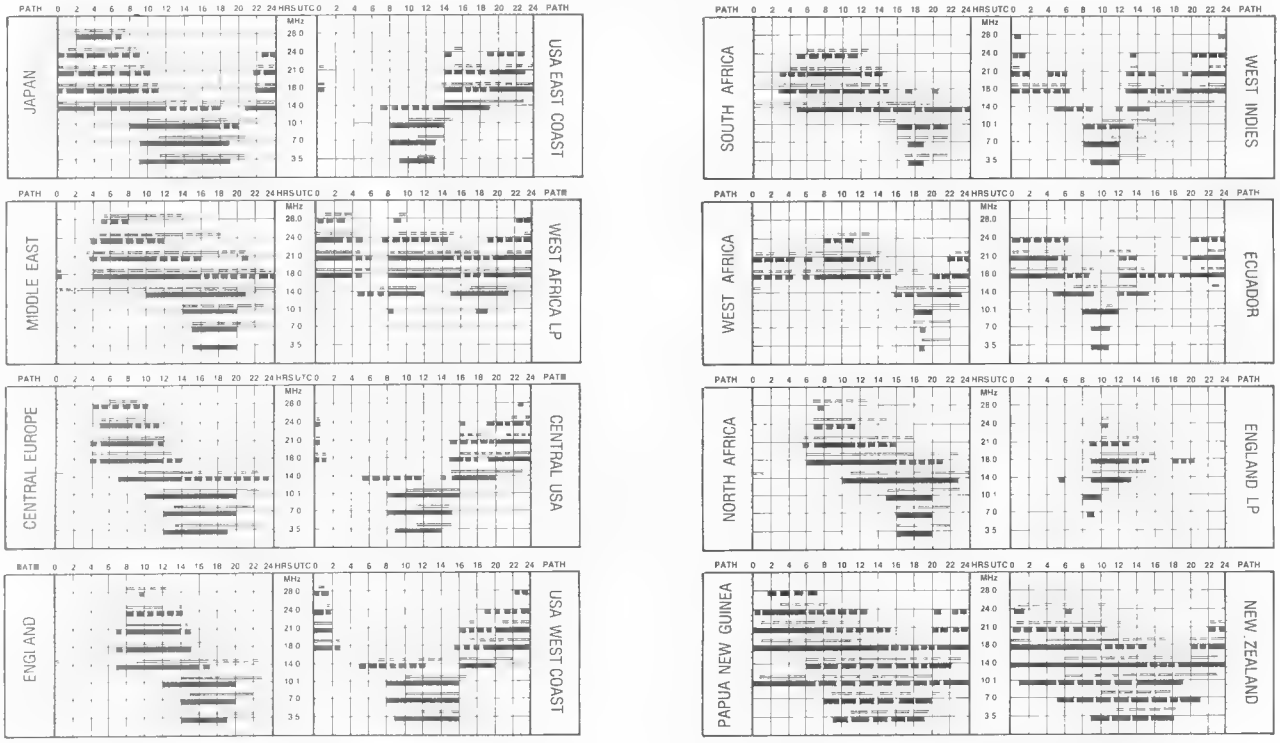
Len Poynter VK3BYE



LEGEND

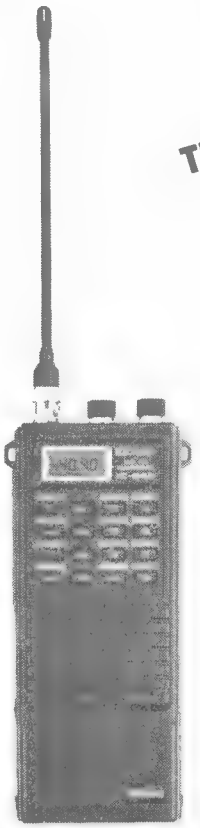
Paths unless otherwise indicated (ie LP—long path) all paths are short path.

Predictions reproduced courtesy of the Department of Science and Technology, Ionospheric Prediction Service, Sydney

All times in UTC

ICOM

THE NEW



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Silent Keys

It is with deep regret we record the passing of —

MR L H ROEGER	VK6HR
MR F T ADAMS	VK4AID
MR WILLIAM CUNDY	VK2VHV
MR R J SCOTT	VK2ACN
MR ALAN VARLEY	VK3YH

Obituaries

PETER ADAMS **VK2JX**

With the passing of Peter Adams, VK2JX, on 23rd July, amateur radio lost another old timer who was active on the air until almost the end. He was well known and respected by his business associates and many radio amateur friends.

First licensed in 1928, he was active in many posts of the ARA and WIA for some forty years. Presidents come and go but it generally fell to the lot of Peter to be elected secretary the true hub of any voluntary organisation. He was secretary of the ARA and post war secretary of the NSW division of the WIA. He served as Federal Vice-President of the WIA from 1935 to 1938 before moving to New Zealand for two years.

Post-war, pre Dural days the Sunday morning broadcasts were carried out from individual shacks. (A scheme originated by the late Wal Ryan VK2TI). Peter provided the broadcast from his Wentworth Falls home for a number of years. His greatest interest was always in VHF bands.

VK2JX was a friend to all, the new-comer and OT alike. An extrovert, he was never happier than when he could "ragchew" with his many acquaintances. He was never heard to make derogatory remarks about any person.

The last twenty seven years of his working life was spent with "Union Carbide".

In his later years with the company he was a designer of ancilliary equipment used in industry.

Peter was a foundation member of the IREE.

In 1972 he retired to Valla Beach on the North Coast and finally returned to his old Wentworth Falls QTH in 1978.

To his wife Dorothy, daughters Judith and Susan and son Stephen, amateurs extend their deepest sympathy.

Bill Moore VK2HZ
AR

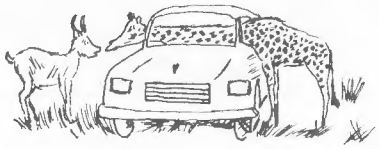
JAPAN'S FIRST AMATEUR RADIO SATELLITE — JAS-1

Activity on the first Japanese amateur satellite, scheduled to be launched in March 1986 is proceeding well. The assembly of the flight model is in the final stage having completed electrical and mechanical interface checking and fit checking of the satellite to the rocket pad.

JAS-1 will have a circular orbit at the altitude of 1500 km and an orbital period of 120 minutes, estimated inclination of 50 degrees, permitting, transmission of maximum duration of 20 minutes and daily transmission of maximum 140 minutes. Uplink will be 145.8-146, downlink 435-438 MHz. The hardware will have a design life of at least three years.

from Region 3 News — August 1984
AR

NOTICE



ALL copy for inclusion in February 1985 Amateur Radio must arrive at Box 300, Caulfield South, 3162 no later than midday 3rd January.

HAMADS

PLEASE NOTE: *If you are advertising items FOR SALE and WANTED please write on separate sheets, including ALL details, eg Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed.*

*** Please insert STD code with phone numbers when you advertise.**

- Eight lines free to all WIA members. $9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters double spaced to PO Box 300, Caulfield South 3162.
- Repeats may be charged at full rates.
- QTHR means address is correct as set out in the WIA current Call Book.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

Conditions for commercial advertising are as follows: The rate is $15 for four lines, plus $2 per line (or part thereof) minimum charge $15 pre-payable. Copy is required by the deadline as stated below indexes on page 1.

TRADE HAMADS

AMIDON FERROMAGNETIC CORES: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE TO: RJ & US IMPORTS, Box 157, Mortdale, NSW 2223. (No enquiries at office: 11 Macken Street, Oakley, 2223).

70 cm power/VSWR meters (see p 23, AR July 1984) 50 W @ $112.80. 23 cm long loop yagis from $64.80. Waveguide modules, tubing & flanges. Gun & mixer diodes at good prices. 0.141" semi-rigid coax @ $2.50/metre. 1/16" DS PTFE board @ 14c/sq cm. 17 pF UHF Porcelain variables @ 10 for $3.50. Send SAE for lists to Microwave Developments, 6 Netley Road, Mount Barker, SA 5251.

WANTED — NSW

AMPLIFIER MA 1000, HP 600, HP 200T/A. TP 500. VK2BMI, QTHR. Tel: (02) 771 1657.

CRYSTALS for IC-21A/IC-22A for old repeater ch 7—now 6950—. These xtals are marked R146.95 & T146.35; HC-25u holders, & are probably in someone's defunct unit. Advise price etc to Alan VK2AHR, new QTH, 44 Pacific Way, Tura Beach, NSW, 2548. Tel: (0649) 5 9275.

ICOM IC-202, 2 m SSB tcvr or similar, working. Interstate offers welcome. Noel VK2YXM, QTHR. Tel: (02) 871 3079.

INSTRUCTION BOOK for Yaesu FLD DX Linear Amp, copy or loan. All expenses paid. John VK2ANX, QTHR. Tel: (02) 638 4191.

POWER LEAD — DC for Yaesu FT-7, YC7B- readout must be perfect condition. N Tipping. Tel: (065) 69 5242.

WANTED — VIC

CIRCUIT — Copy of National NC-125 rx. Will pay all expenses for this. VK3CV, QTHR. Tel: (03) 82 6431.

FT-780R & FT-680R, reasonable prices. Details to VK3XEX, Rokewood Junction, Vic, 3351.

TIMEBASE MODEL 6S for BWD 525 oscilloscope. VK3AYY. Tel: (03) 725 8770.

TRANSVERTER — Dick Smith 80-11 m. Cheap for aspiring novice. Also 2N5591 PA transistors. Cond & price to Jeff L30409, QTHR. Tel: (03) 546 3940.

WANTED — QLD

VALVES — 811A. Lionel VK4NS, QTHR.

WANTED — SA

COLLINS KWM-2/2A. Must be in 1st class work order and with power supply (240 V). Please contact John. Tel: (08) 267 4518.

FOR SALE — ACT

FT-107 tcvr, ext VFO, CW narrow filter & YM-38 desk mic. Very good condition. $900 ONO. Richard VK1UE, QTHR. Tel: (062) 58 1228.

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ICOM IC-502 6 m SSB tcvr & 12 V DSE power supply in ex condition & orig packing. $125 complete. VK2RR, QTHR. Tel: (02) 477 3829.

ICOM IC-740 HF tcvr with power supply IC-PS15. Little use, new condition. $850. VK2DCG, QTHR. Tel: (02) 498 1103.

KENWOOD R2000 comm rx. 100 kHz - 30 MHz, 10 mems, 2 clocks & digi readout. As new with manual. $500. Chris VK2XZZ, QTHR. Tel: (02) 331 2944.

KENWOOD TR-2500 2 m H'held tcvr & SMC-25 spkr mic. Both in ex condition. Includes rubber duck ant, Ni-cad recharge battery, battery charger, circuit diagram & orig pack. $300. Mike VK2DZZ. Tel: (02) 499 2489 AH.

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MORSE TRAINER PROGRAMME for VIC-20 or Commodore-64 computer as featured in AR Sep 84. Special VIC version will run in unexpanded VIC. Tape $5 or disk $10. Neil Cornish VK2KCN, QTHR.

TRANSFORMER. New 240/17VAC 20-25A. $45. Kenwood TR-3500 incl spkr mic SMC-25. $275. Gooseneck with stand 30 cm long. $5. VK2BMI, QTHR. Tel: (02) 771 1657.

YAESU 101ZD tcvr with WARC bands. O/P 150 W. $600 or offer. FL-2100B linear. Just checked & OK. $500 or offer. Both units VGC with H'books. 3 way pwr/mod/SWR meter. $20. Pwr/SWR meter. $5. Kenwood 7730 2 m FM mobile 25 W. Orig pack & manual. Also mob mount. VGC $300 or offer. Kenwood 120 V Mob HF tcvr in VGC with serv manual. Also hand mic, desk mic & mob mount, plus Lunar 150 W linear. 13.8 V. $550 both or will separate. Kenwood MA-5 set of mob whips. 80 thru 10 m. $50 or offer. Sony ICF-2001 port comm rx. AM/SSB/CW. Also FM b'cast band. keyboard freq entry. $170 or offer. TRS-80 mod 1 lev2 computer. 48K in keyboard. Green screen, cass record & transformer. Also software & books. Make an offer around $450. Complete system VGC. AKG stereo h'phones $10. High imp mic. $10. All offers will be considered. David VK2NH, QTHR. Tel: (02) 84 5860. Before 10am & after 7pm weekdays, anytime weekend.

YAESU FT-707 tcvr. $580. FTV-707 6 m t'verter. $200. Daiwa RF-550 RF speech processor. $100. $700 the lot. Will separate. All mint cond. VK2BOD. Tel: (02) 601 2560 AH.

FOR SALE — VIC

ATU-FC as new companion to FT-707. $140. VK3FT. Tel: (03) 82 4853 after 5pm.

COMPUTER. Port Sharp 1211 pocket computer, 13K, microsoft basic. Sharp CE-122 print/cass interface with recharge batts/charger. Tandy Minisette 9 comp cass record. Owners & application manuals. With carrying case, cables & over 60 programmes. Ideal for novice programmer or as scientific calculator. Cost over $600. Sell $250. Ray VK1ZJR/3 QTHR. Tel: (03) 368 2285.

COMPLETE AMATEUR STATION. FT-707, FP-707, FC-707 with MR7 rack & mic. All ex cond, no mods. Instr books and cartons. $800. Alf VK3DFW. Tel: (03) 873 3777 BH or 877 2983 AH.

FT-7 tcvr instr manual, mob mount, ex cond, $325. Chris, VK3JU, QTHR. Tel: (03) 861 7204.

HY GAIN 18 AVT/WB. 5 band vert ant. Good order, can be seen working. $55 comp with manual. Must be picked up from QTHR. Harry VK3ASI. Tel: (052) 43 1831.

KENWOOD TL-922 2 kW linear amp. 160/10 m. Using 2-3/500Z. Immac cond. $1650. Laurie VK3AW. Tel: (03) 376 1429.

KENWOOD TS-130S, ext VFO & SSB filter YK-88SN. With manual & cartons. $650 ono. Realistic AX-190 amateur comms rx. 3.5 to 30 MHz. $80. Bob VK3CSR, ex VK3NSR, QTHR. Tel: (052) 95444.

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PUBLIC ADDRESS SYSTEM (Aust Sound), old mod, incl radio, turntable. Could be restored to work order or stripped for parts. Best offer. Paul VK3NFJ. Tel: (03) 233 2982.

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YAESU FT-102 with YM-38 desk mic. As new: $750. Icom kamp) rx. Xtal mic, VSWR meter. 80, 40, 20 m dipole $400. Electrophone UHF unit $300. Ernie VK3DPP. Tel: (03) 598 5082.

YAESU FT-102 tcvr $900. FC-102 ATU $250. FP-102 spkr $50. YM-38 desk mic $30. All in mint cond with orig cartons & manuals. Frank VK3PJW. Tel: (03) 877 5607.

YAESU FT-102 with YM-38 desk mic. As new. $700. Icom 701 with SM-2 desk mic. Recently serviced by Icom. $400. Kenwood with MC-355 hand mic. $300. Lunar HF-3-100 L2 linear amp. 4 W in for 100 W out. Solid state. $75. VK3BSO, QTHR. Tel: (03) 787 3479.

YAGI — 4 el cut for 146 MHz. $10. 9 el yagi for 583 MHz ATV. $10. Unidyne 1A replica rx. VGC. $100. Grove CVR-1A UHF conv. 220-400 MHz on 118-136 MHz. $125. Sony ICF-8650, AM, FM, Air 73.6-108, 115-138 MHz, 530-1745 kHz. 3 preset buttons on Airband digi readout, 12 V, inst & service manual. Jeff L30409, QTHR. Tel: (03) 546 3940 AH.

YAESU FT-901 DM with hand mic. $700 ono. Yaesu FTV-901 R 6 m, 2 m & 70 cm. $400 ono. Astor minicamera & monitor AMC2AX incl mod composite video out. $120. Palomar RF transformer. 500 W 8, 12.5, 16, 22, 32 to 50 ohm. $50. Kenwood Hamclock. 24 hour analog. $15. Max VK3BAX, QTHR. Tel: (052) 9 7401 after 1830 EAST.

FOR SALE — QLD

COMPLETE STATION. Yaesu FT-102 tcvr. FV-102DM VFO. FL-2000Z linear. FS-600S. Peak pwr output meter. 1000 W Heath. 1000 W dummy load coax switch. Willis 25 W 2 m mobile. Auto keyer & key. Butternut trapped vertical. Mostly 18 mths old. New cond. The lot $1600. Tel: (07) 395 0055.

FT-77 HF tcvr. 100 W with WARC bands. 1 yr old with little use. $650. Ross VK4IY, QTHR. Tel: (075) 65 1445 weekends.

FOR SALE — SA

COMPUTER TAPE — 2000' of ½" on computer spools. Complete with covers for $3 each. Tel: (08) 389 6221.

IC-22S $200. TS-120V with FL-110 $550 ono. All with original pack, good cond. VK5GN. Tel: (08) 42 7703.

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YAESU FT-230R, 25 W 2 m FM tcvr. 144-148 MHz. Still under warranty. Orig packing etc. As new. $295. Bob VK5AUT. Tel: (08) 43 5714.

FOR SALE — TAS

KENWOOD TS-430S, 0-30 MHz tcvr incl CW & AM filters. As new $900. Icom IC-701, PS-701 10-160 m tcvr & power supply. As new. $800. Yaesu FT-101B, 10-160 m tcvr in good cond with CW filter. $350. Yaesu FV-101 ext VFO. $100. Hidaka VS-22 10-15 m, 3 el yagi. $120. John VK7JV. Tel: (003) 44 3798.

YAESU FT-560, cooling fan, very good cond. Complete with Yaesu ext spkr, low pass filter, SWR meter & mic. $350. Ian VK7JY, 28 Welman Street, Launceston, Tas, 7250. Tel: (003) 31 9124.

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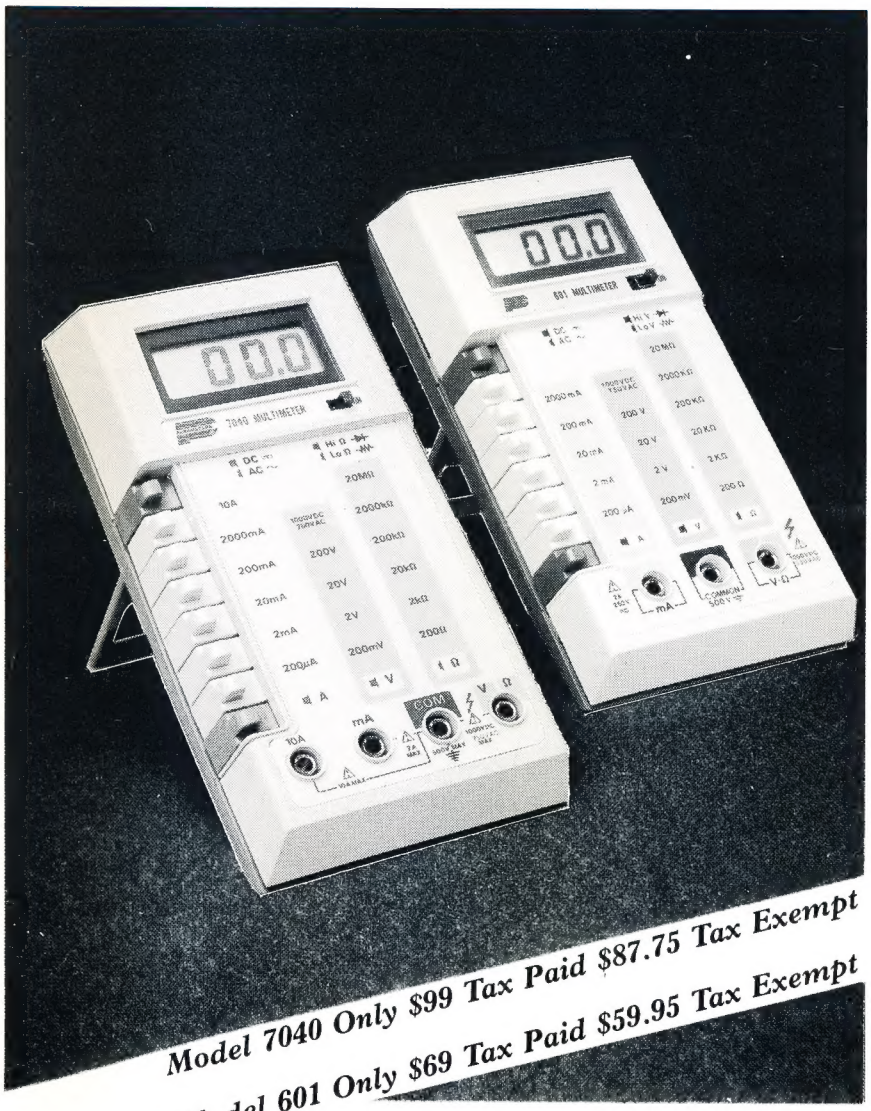


Model 7040 Only $99 Tax Paid $87.75 Tax Exempt

Model 601 Only $69 Tax Paid $59.95 Tax Exempt

Here's your chance to own a Parameters Model 7040 or Model 601 digital multimeter, probably the best value instruments of their type in Australia. Instruments that are widely respected for their proven quality, ruggedness, dependability, accuracy and style.

Features

- 3½ digits
- 28 ranges
- Basic DCV accuracy 0.1% (7040) and 0.25% (601)
- Battery Life >2,000 (7040) hours and >200 hours (601)
- Hi-Lo Volt resistance tests
- Overload Protection on all ranges
- Current ranges 10A (7040) and 2A (601)
- Auto polarity
- Finger guards on probes and shrouded plugs for safety
- Low battery indicator
- Quality leads and Probes included

Our No-Nonsense Warranty

You have the full protection of our no-nonsense warranty for a full 12 months from the date of purchase. Should your instrument develop a fault not attributable to physical abuse, simply return it to us freight paid and we will either repair or replace it at no charge to you. This applies in addition to all warranty requirements you normally receive under the trade practices act.

ORDER NOW
and receive a bonus vinyl carrying case (normally $12.00)

All prices include delivery anywhere in Australia

ORDER FORM

I would like to take advantage of your special digital multimeter offer. Please supply me meter(s) as set out below. I understand that I will receive a carrying case for each meter ordered at no extra charge.

QTY.	MODEL	PRICE TAX* FREE	PRICE TAX PAID	TOTAL AMOUNT
	601	$59.95	$69.00	$
	7040	$87.75	$99.00	$
				$

* Tax free orders must include an exemption certificate on an official company order.
** Bankcard users be sure to include your full home address, not a PO box number.

PLEASE ALLOW 7 DAYS FOR DELIVERY

NAME .....

ADDRESS .....

.....

☐ I enclose my cheque for $ .....
☐ Please charge my Bankcard**
No. 496 __ __ __ __ __ __ __ __ __ __
☐ Our Company Company No. ..... is enclosed

SIGNATURE.....

PARAMETERS PTY LTD
PERFECTION IN MEASUREMENT

Detach and return to:
Parameters Pty Ltd. PO Box 573. ARTARMON NSW 2064. **Offer closes 31st January, 1985.**

Sydney: 41 Herbert St., Artarmon, N.S.W. 2064. Phone: (02) 439 3288 Melbourne: 53 Governor Rd., Mordialloc, Vic. 3195. Phone: (03) 580 7444

FULL 90 DAY WARRANTY

★ NEW IMPROVED MODEL ★

As reviewed in Electronics Australia Oct 1982 & Electronics Today International Nov 1982

Cat. XC-2010

At $199 the Voyager Car Computer represented outstanding value for money. The Voyager is the only low-cost unit that will give you full consumption (the most important feature in a car computer) in both metric litres/100km AND good old MPG! At $199 many, many hundreds have been sold. NOW you can grab one absolutely complete for only $125 - a saving of 37% or $74! The Voyager comes complete with all fitting hardware - even down to a roll of insulation tape! Installation generally takes between 4 and 6 hours depending on vehicle.

SPARE FLOW SENSORS To avoid problems when changing cars, why not buy a spare fuel flow sensor? They are about the only thing that can wear out.

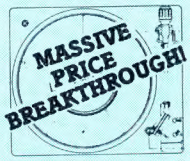
Cat. XC-2036 ONLY **$29.50**

The Voyager is available from the following dealers at your convenience.
★ ALL JAYCAR STORES AND BY MAIL ORDER: JAYCAR P.O. Box 480 Auburn 2144 ★ ZAP ELECTRONICS (all stores) ★ ROD IRVING (Melbourne 347 9257 or Northcote 489 8131 ★ ALTRONICS (Perth 328 1599)

ELECTRONIC BELT DRIVE TURNTABLE - BSR QUALITY

Jaycar has made a sensational SCOOP PURCHASE of B.S.R. belt drive turntables from England at below manufacturers cost!
Two models available AA-0290 works from 9-12V DC and the AA-0292 from 240V AC (includes 12V 400mA adaptor). The DC motor drive is electronically controlled.
SPECIFICATIONS: ★ Dimensions 330(W) x 285(D) x 60(H)mm overall ★ Platter diameter 280mm ★ 2 speed - 33 & 45 rpm (internally adjustable) ★ Pick-up arm counterbalanced type with cueing facility ★ Pick-up ceramic (stereo) with diamond stylus ★ Turntable operation - auto stop, will return to rest automatically, turntable chassis is sprung on all corners with transit screws and clips. ★ Weight 1.5kg ★ Output stereo RCA sockets underneath unit.

CHECK THE PRICE! Cat. AA-0290
(requires 9-12V DC @ 400mA)
ONLY $29.95
240V VERSION Cat. AA-0292
(includes 12V 400mA adaptor)
ONLY $39.95
(Post and Packing this item $5 not $4.50)



MICROBOTS® BACK!!

We have secured another shipment of the two most popular Micro Robot kits.

PIPER MOUSE

This 'microbot' is powered by 2 DC motors that drive wheels. When special ultrasonic whistle is blown, the unit goes left, right, straight ahead according to your command.Complete, including perspex dome cover! Be a Pied Piper!
Cat. KJ-6680

$34.95 - SAVE $5.00

MEMOCON CRAWLER

This robot is controlled by a keyboard (which is supplied). The keyboard plugs into the robot. Up to 256 discrete commands can be entered into the robots memory (RAM). The robot will then move according to programmed instructions. Lights and a buzzer can also be programmed to operate as well.
Cat. KJ-6686

$69.95 - SAVE $10.00

HIGH RESOLUTION GREEN & AMBER SCREEN MONITORS

NEW MICRON SERIES II

- 1050 lines resolution centre screen
- 22MHz bandwidth
- Video input switch for networking
- Non-glare high grade monitor tube

JAYCAR VIDEO ENHANCER

A service to the Professional

Designed by a staff member of a well known Australian University and made in Australia. It is the only 625 line 50 frame PAL-D Australian designed and made unit that we know of. The unit features enhance, core/gamma control and by-pass switch. It will drive up to 3 VCR's at once with no degradation and works well as a video distribution amp as well. This is NOT A KIT and is guaranteed for 3 months.
Cat. AV-6501

NOT $69.95 ONLY $59.95

★ NEW ★ "SQUEAKY CLEAN" MAINS FILTERS

Two fantastic low cost models. MS-4010 will supply up to 4 appliances. Each 240V socket is isolated from the other, i.e. interference from disc drives is de-coupled from the CPU power supply etc.
It will supply up to 4 outlets with a total load of 6 amps (unswitched)
Cat. MS-4010

ONLY $99

Single 10 amp line-socket type filter (unswitched).
Cat. MS-4012

ONLY $29.95

400 VOLT TRIAC BARGAIN!!

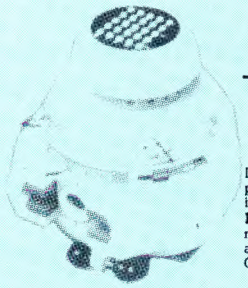
Yet another SCOOP PURCHASE!! Genuine 'Motorola' brand 2N6343 12A 400V Triac. TO-220 case. Equivalent to GE SC141D which sells for $1.65. (As used in the Musicolor).
Cat. ZX-7140

ONLY $1.50 each OR pack of 10 for $10.00

VHF-FM WIRELESS TRANSMITTER MODULE

Compact, very stable ultra-low power transmitter. So stable that 10 of them will sit side-by-side on 1MHz of bandwidth and not interfere with each other. Low current drain from a 9V battery, works in the little used low-end of the FM band. Tuneable. Line level input with trimpot attenuator. Low noise Hi Fi.
One was recently used by a very famous ice skating pair to transmit to them on ice. Complete with specs sheet and connection instructions.
Cat. DT-5450

ONLY $49.95



NEW - PROGRAMMABLE MOBILE ROBOT

Low-cost fun learning with this sophisticated robot! Have hours of educational fun programming this fun device to do what you command through the 25-key keyboard on its head!!
FEATURES: ★ 4 bit microprocessor controlled ★ 3 speed gears selected by programming thru' micro ★ Can travel in 4 directions plus angles and curves ★ Has lights and audio ★ Complex routines can be easily programmed (up to 48 commands long).
Cat. XR-1024

SAVE WITH JAYCAR - ONLY $49.95

BARGAIN OF THE CENTURY!!

How do we do it? Another BARGAIN!!

Once again, Jaycar has secured a massive below-cost scoop purchase. This time a nifty combination VHF/UHF television tuner assembly! We DARE NOT MENTION the FAMOUS JAPANESE BRAND of this quality assembly!

★ Brand, spanking new
★ Separate VHF rotary tuner
★ Separate UHF rotary tuner
★ All knobs and wiring INCLUDED!
★ Attractive front panel fascia included!
★ Circuit diagram included!

Be quick to secure one of these as we only have limited stocks.
Cat. DM-9004

ONLY $69.95 - HURRY!!

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Tel: (02) 745 3077
HURSTVILLE - 121 Forest Road.
Tel: (02) 570 7000

Jaycar ELECTRONICS

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Mon - Fri: 9am - 5.30 pm Carlingford, Concord and Hurstville
Mon - Fri: 8.30am - 5.30pm Sydney.
Thursday nights: 8.30pm Carlingford, Hurstville and Sydney
Saturday: Concord 9am - 4pm: Sydney 8.30am - 4pm
Saturday: Carlingford & Hurstville 9am - 12pm

Incorporating ELECTRONIC AGENCIES

NUMBER 1 FOR KITS

POST & PACKING CHARGES

$5 - $9.99	$1.50
$10 - $24.99	$3.20
$25 - $49.99	$4.50
$50 - $99.99	$6.50
$100 - $198	$8.00
Over $199	$10.00

COMET ROAD FREIGHT ANYWHERE IN AUSTRALIA ONLY $12.00

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